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J. Groth  
1983-1990

General Index

Catalogue #1-721

Journal 1984-1990

California

Arizona

Oregon

New Mexico

Colorado

Idaho

Eastern trip:

Montana to Newfoundland  
to British Columbia

[illegible]

Groth, J.

1983-1990

Catalogue # 1 - 721





J. Groth  
1983

# Catalog

1.

2 June 1983

1  
(full skin) juv. ♂ Loxia curvirostra #039 wt. 32.7  
captured 27 May 1983, Poverty Hollow,  
Montgomery Co., Virginia; streaked plumage  
with 2 red spots on head; testis 1mm.  
with flock of others.  
[VPI 10325]

2  
(full skin) juv. ♂ Loxia curvirostra #041 wt. 32.9  
captured 27 May 1983, Poverty Hollow,  
Montgomery Co., Virginia; streaked  
plumage - bill barely crossed; testis 2mm.  
with flock of others.  
[VPI 10326]

3 June 1983

3  
(full skin) ad ♀ Loxia curvirostra #014 wt. 34.9  
captured 3 March 1983, Brush Mt.,  
2 mi. N. Blacksburg, Virginia; green  
plumage. Culmen at capture = 14.9mm.  
Died of sickness. Caught as lone bird.  
[VPI 10320]

4 June 1983

4.  
(full skin) juv. o? Loxia curvirostra #065 wt. 28.8  
captured 1 June 1983, Poverty Hollow,  
4 mi. NW Blacksburg, Virginia  
Caught w/ 2 other juveniles (#64, 66)  
[VPI 10327]

W





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catalog

2.

4 June 1983

- 5 juv. ♂ Loxia curvirostra #076 wt. 37.0  
(full skin) captured 3 June 1983, Poverty Hollow,  
4 mi. NW Blacksburg, Virginia.  
Streaked plumage with some red on head.  
Caught as lone bird.  
[VPI 10329]

8 June 1983

- 6 ad. ♂ Loxia curvirostra #023 wt. 33.6  
(full skin) captured 12 April 1983, Brush Mt.,  
2 mi. NW Blacksburg, Virginia.  
Red plumage. Caught alone. Died of  
sickness. [VPI 10324]

9 June 1983

- 7 subad ♀ Loxia curvirostra #017 wt. 35.3  
(full skin) captured 31 March, 1983, Brush Mt.,  
2 mi. NW Blacksburg, Virginia.  
Some streaks on breast. Caught with #018.  
Died of sickness  
[VPI 10321]

10 June 1983

- 8 ad. ♂ Loxia curvirostra #018 wt. 29.5  
(full skin) captured 31 March, 1983, Brush Mt.,  
2 mi. NW Blacksburg, Virginia.  
Red plumage. Caught with #017.  
Died of sickness.  
[VPI 10322]



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3.

11 June 1983

9 ad ♂ Loxia curvirostra #088 wt. 33.2  
(full skin) captured 10 June 1983, Poverty Hollow,  
4 mi. NW Blacksburg, Virginia.  
Testes L  $4.5 \times 3.9$   
R  $3.8 \times 3.5$ ; orange plumage.  
[VPI 10330]

18 June 1983

10 ad ♂ Loxia curvirostra #021 wt. 33.9  
(full skin) captured 28 March 1983, Brush Mt.,  
2 mi. N Blacksburg, Virginia.  
Caught with #020 and 022.  
[VPI 10323]

11 ad ♀ Loxia curvirostra #098 wt. 33.1  
(full skin) captured 18 June 1983, Poverty Hollow,  
4 mi. NW Blacksburg, Virginia.  
With #099 as pair. Brood patch.  
[VPI 10332]

12 ad ♂ Loxia curvirostra #099 wt. 31.4  
(full skin) captured 18 June 1983, Poverty Hollow,  
4 mi. NW Blacksburg, Virginia.  
With #098 as pair. Testes L  $5.3 \times 4.2$   
R  $4.8 \times 4.1$ .  
[VPI 10331]

23 June 1983

13 ad ♀ Loxia curvirostra #100 wt. 34.0  
(full skin) captured 19 June 1983, Poverty Hollow,  
4 mi. NW Blacksburg, Virginia. Ovary  $7.0 \times 5.3$ .  
With #101 as pair. [VPI 10334]





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4.

23 June 1983

14 ad ♂ Loxia curvirostra #101 wt. 34.0  
(full skin) captured 19 June 1983, Poverty Hollow,  
4 mi NW Blacksburg, Virginia.  
With #100 as pair. Testes  $\begin{matrix} L & 5.3 \times 4.7 \\ R & 4.8 \times 4.6 \end{matrix}$ .  
[VPI 10333]

18 July 1983

15 juv. ♂ Loxia curvirostra #120 wt. 37.1  
(full skin) captured 18 July 1983, Poverty Hollow,  
4 mi. NW Blacksburg, Virginia.  
Streaked plumage, with red spots all over.  
Caught with #118, 119.  
[VPI 10336]

21 July 1983

16 ad ♀ Loxia curvirostra #112 wt. 31.0  
(full skin) captured 4 July 1983, Poverty Hollow,  
Virginia, 4 mi. NW Blacksburg. Slight  
streaks on flanks. Captured with #113  
as pair. Died of sickness.  
[VPI 10335]

29 August 1983

17 juv. ♂? Loxia curvirostra #066 wt 25.8  
(full skin) captured 1 June 1983, Poverty Hollow,  
4 mi NW Blacksburg, Virginia.  
Streaked plumage. Original culmen = 11.4 mm.  
Original wing = 87.2 mm. Caught with  
#064, 065. [VPI 10328]



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5.

30 October 1983

- 18 ad. ♀ Loxia curvirostra #126 wt 32.3.  
(full skin) captured 26 October, 1983, Poverty  
Hollow, 4 mi NW Blacksburg, Virginia.  
Fresh fall plumage. Caught as loner.  
[VPI 10338]

Highlands, North Carolina

30 October 1983

800m

- 19 subad ♂ Loxia curvirostra #127 wt. —  
(full skin) streaked, molting into orange and red.  
Testis 1mm. [VPI 10339]

- 20 ad ♂ Loxia curvirostra #129 wt 31.  
(1/2 skin 1/2 skel.) Rosy red plumage. Molt not complete.  
Testes "small". — (skeleton broken)  
[VPI 10340]

- 21 ad ♀ Loxia curvirostra #130 wt 28.  
(full skin) A few streaks. Ovary small.  
[VPI 10341]

- 22 subad ♂ Loxia curvirostra #132 wt 28.5  
No wingbars. Red & yellow mix. Testes < 1mm.  
[VPI 10342]

- 23 subad ♀ Loxia curvirostra #133 wt. 28.  
Ovary 2mm.  
[VPI 10343]



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6.

Highlands, North Carolina  
30 October 1983

24 ad ♀ Loxia curvirostra #134 wt. 27.  
(full skin) No streaks. Saffron rump.  
[VPI 10344]

25 ad ♂ Loxia curvirostra #135. wt 30.  
(full skin) Rosy red.  
[VPI 10346]

26 imm ♀ Loxia curvirostra #136 wt 26.5  
(full skin) Short right outer tail feathers.  
[VPI 10347]

27 subad ♂ Loxia curvirostra #138 wt. 30  
(full skin) Red with streaks on belly.  
[VPI 10348]

28 subad ♂ Loxia curvirostra #139 wt. —  
(full skin) Orange with streaks.  
[VPI 10349]

29 subad ♀ Loxia curvirostra #148 wt 31.6  
(full skin) Molting, streaks on belly, into green.  
Ovary 3mm. Crop full of 14 Pinus strobus  
seeds. Accidentally killed in net.  
[VPI 10345]

31 October

30 juv ♂ Loxia curvirostra #141 wt 28.  
(full skin) streaked with some red spots. Rump  
tract in sheath.  
[VPI 10350]





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7.

November 4, 1983

31 ad ♂ Loxia curvirostra #143 wt. 33.1  
(full skin) Red, buffy wingbars. Seen feeding  
striped bird by regurgitation in cage.  
Testes 2mm. Captured 30 October 1983,  
Highlands, North Carolina.  
[VPI 10351]

32 subad O? Loxia curvirostra #146 wt 31.9  
(full skin) Captured 30 October 1983, Highlands,  
North Carolina. Some orange on vump.  
[VPI 10352]

33 ad ♀ Loxia curvirostra #147 wt 30.3  
(full skin) Captured 30 October 1983, Highlands,  
North Carolina. Ovary 3mm.  
[VPI 10353]

34 subad ♂ Loxia curvirostra #154 wt. 29.1  
(full skin) Captured 31 October 1983, Highlands,  
North Carolina. Streaked -- into red.  
Testis 1mm.  
[VPI 10354]

November 11, 1983

35 ad ♀ Loxia curvirostra #125 wt 30.6  
(full skin) Captured 2 October 1983, Poverty Hollow,  
4 mi. NW Blacksburg, Virginia. Caught  
as lone bird.  
[VPI 10337]



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8.

Brush Mt., 2 mi. N. Blacksburg, Virginia

19 March 1984

36 juv. ♂ Loxia curvirostra #184 wt. <sup>not</sup> taken  
(full skin) Found in net with #185, 186, 187.  
Testes  $\begin{matrix} L & 1.0 \\ R & 1.0 \end{matrix}$  No fat.

37 ad ♂ Loxia curvirostra #185 wt 32.3  
(full skin) Found in net with #184, 186, 187.  
Testes  $\begin{matrix} L & 5.0 \times 4.3 \\ R & 4.8 \times 4.2 \end{matrix}$  Skull fully ossified.

38 ad ♀ Loxia curvirostra #186 wt 30.4  
(full skin) Found in net with #184, 185, 187.  
Ovary  $5.2 \times 3.9$  mm. Slight traces of streaks.

39 subad ♂ Loxia curvirostra #187 wt 33.9  
(full skin) Found in net with #184, 185, 186. - dead  
Testes  $\begin{matrix} L & 5.2 \times 4.0 \\ R & \text{a little less.} \end{matrix}$  Some streaks on belly.

8 April 1984

40 ad ♂ Loxia curvirostra #192 wt. 31.4.  
(full skin) Testes  $\begin{matrix} L & 4.8 \times 3.8. \\ R & 4.6 \times 3.5. \end{matrix}$  Skull ossified.

20 May 1984

41 ad ♂ Loxia curvirostra #194 wt. 30.6  
(flat 1/2 skin  
1/2 skel.  
tissues) Captured as lone bird. Poverty Hollow,  
4 mi. NW Blacksburg, Virginia.



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Poverty Hollow, 4 mi. NW Blacksburg,  
Virginia

23 May 1984

42 ad ♂ Loxia curvirostra #195 wt. 30.4 gms.  
(flat 1/2 skin, 1/2 skel tissues) caught as loner. Testes L 4.8 x 4.3  
R 4.5 x 4.1  
No fat. Cloacal protuberance.

2 mi. N. Mountain Lake, Virginia.

26 May 1984

43. ad ♂ Vireo solitarius #1  
(skel + tissues) Testes L 3.8 x 2.9  
R 3.3 x 2.9. Wing 77.5 mm.

44 ad ♂ Vireo solitarius #2  
(skel + tissues) Testes L 5.5 x 3.8  
R 3.9 x 3.4. Wing 80.2 mm.

45 ad ♂ Vireo solitarius #3  
(skel + tissues) Testes L 4.7 x 3.4  
R 3.5 x 3.3. Wing 76.5 mm.

27 May 1984

46 ad ♂ Vireo solitarius #4  
(skel + tissues) Testes L 6.9 x 5.0  
R 3.7 x 3.4. Wing 83.7 mm.

Poverty Hollow, 4 mi NW Blacksburg, Virginia

28 May 1984

47 ad ♀ Loxia curvirostra #196 wt 30.2  
(flat 1/2 skin, 1/2 skel + tis) captured 24 May 1984, as loner. Ovary <sup>or 5.5</sup> 5-6 mm.

48 ad ♂ Loxia curvirostra #197 wt 31.2  
(flat 1/2 skin, 1/2 skel tissues) captured 25 May 1984. Testes L 3.5 x 3.2  
R 3.5 x 3.0.  
Little/no fat. Buffy feather edges.





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# catalog

10

2 mi N Mt. Lake, Virginia

29 May 1984

49 ad ♂ Vireo solitarius #5  
(skel + tissues) Testes  $\begin{matrix} L & 5.8 \times 4.8 \\ R & 4.7 \times 3.7 \end{matrix}$  Wing 80.2 mm.

Poverty Hollow, 4 mi NW Blacksburg, Virginia  
elev. 1900ft., 31 May 1984

50 ad ♂ Loxia curvirostra #198 wt. 31.8  
(flat 1/2 skin, 1/2 skel tissues) Testes  $\begin{matrix} L & 4.4 \times 4.0 \\ R & 4.3 \times 4.0 \end{matrix}$  Found alone in net.  
Orange. Weird (bot-fly?) protuberances  
on right shoulder

1 June 1984

51 ad ♂ Loxia curvirostra #199 wt 29.3  
(flat 1/2 skin, 1/2 skel tissues) Testes  $\begin{matrix} L & 4.8 \times 4.3 \\ R & 5.3 \times 4.9 \end{matrix}$  Found with #200  
in net.

52 ad ♀ Loxia curvirostra #200 wt 27.9  
(flat 1/2 skin, 1/2 skel tissues) Ovary  $6 \times 4.5$  mm. Found with #199.

2 June 1984

53 ad ♂ Loxia curvirostra #201 wt. 31.8  
Testes  $\begin{matrix} L & 4.1 \times 4.0 \\ R & 4.0 \times 3.9 \end{matrix}$  Found alone.  
[1/2 skin, 1/2 skel., tissues]



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11.

2 mi. N. Mt. Lake, Virginia

3 June 1984

54 ad ♂ Vireo solitarius #6  
Testes L  $4.5 \times 3.6$  Wing 77.8 mm.  
R  $3.5 \times 3.3$   
[skel, tissues]

55 ad ♂ Vireo solitarius #7  
Testes L  $4.1 \times 3.9$  Wing 76.3 mm.  
R  $2.2 \times 1.7$   
[skel, tissues]

56 ad ♂ Vireo solitarius #8  
Testes L  $5.7 \times 4.0$  Wing 77.9 mm.  
R  $4.2 \times 3.8$   
[skel, tissues]

Poverty Hollow, 4 mi NW Blacksburg, Virg.

3 June 1984

57 ad ♀ Loxia curvirostra #202 wt 35.1  
Ovary large, follicular -- largest = 1.6 mm.  
Highly vascularized belly. Fat heavy.  
Found alone in net. [flat 1/2 skin, 1/2 skel, tissues]

4 June 1984

58 ad ♂ Loxia curvirostra #203 wt 33.7  
Testes L  $4.3 \times 4.0$  A few juv. streaks.  
R  $4.3 \times 4.2$   
Found alone - lone bird.

[flat 1/2 skin, 1/2 skel, tissues]

59 ad ♂ Loxia curvirostra #204 wt 29.8  
Testes L  $3.9 \times 3.8$  Green w/ red specks.  
R  $3.8 \times 3.8$   
lone bird. [Flat 1/2 skin, 1/2 skel, tissues]



J. Groth  
1984

# catalog

12.

Lab birds, Blacksburg, Virginia

5 June 1984

- 60 ad ♀ Loxia curvirostra #001 (bird "34" on tape)  
Caged with #037 since 27 May 1983.  
[full skel., tissues] Ovary 4.9 x 3.6 mm.  
Captured 22 Feb 1983 on Brush Mtn/002, 003.
- 61 ad ♂ Loxia curvirostra #015 (bird "48" on tape)  
Caged with 025 since 27 Aug 1983.  
[full skel., tissues]  
Captured 5 March 1983 on Brush Mt. as loner.
- 62 ad ♀ Loxia curvirostra #025 (bird "58" on tape)  
Caged with #015 since 27 Aug 1983.  
Captured 14 April 1983.  
Ovary 4.6 x 3.2 mm. [full skel., tissues].
- 63 ad ♂ Loxia curvirostra #037. (bird "70" on tape)  
Captured 18 May 1983 on Brush Mt. as  
pair with #038. In with #001 since  
27 May 1983. Testes ~2.5 mm. [full skel., tiss.]
- 64 ad ♀ Loxia curvirostra #050. (bird "83" on tape)  
Captured 30 May 1983, Poverty Hollow.  
Kept in lab room. Broken right leg.  
[full skel., tissues].
- 65 ad ♂ Loxia curvirostra #064.  
Captured 1 June 1983, Poverty Hollow,  
in group with #65, 66. Original Culmen =  
11.7 mm. Caught as young juvenile.  
Kept in main lab. Testes  $\begin{matrix} L & 2.1 \\ R & 1.5 \end{matrix}$   
[full skel., tissues]



OCT - 44  
 100 - 44  
 100 - 54  
 100 - 64  
 100 - 74  
 100 - 84  
 100 - 94  
 61 - 104 JA  
 71 - 114 KA  
 81 - 124 LA  
 91 - 134 MA  
 101 - 144 NA  
 111 - 154

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catalog

13.

Lab birds, Blacksburg, Virginia

5 June 1984

- 66 ad ♂ Loxia curvirostra #113 (bird "L6" on tape)  
Captured 4 July 1983, Poverty Hollow,  
with paired #112. Kept in main  
lab. Testes L 4.5 x 4.0 R 4.2 x 3.6. [full skel, tissues].
- 67 ad ♂ Loxia curvirostra #121 (bird "M4" on tape)  
Captured 26 July 1983, Poverty Hollow,  
with 122, 123. Kept in main lab.  
Testes about 3mm. ea. at death.  
[full skel., tissues]
- 68 ad ♀ Loxia curvirostra #122.  
Captured 26 July 1983, Poverty Hollow,  
with #121, 123. Kept in main lab  
room - caged with 113, 121, 064.  
Ovary 5-6 mm. [full skel., tissues].
69. ad ♀ Loxia curvirostra #108 28.0 gm  
Captured 20 March 1984, Brush Mt.  
In company of red ♂, recorded but not  
captured. Put in with 064, 113, 121, 122.  
Ovary ~5mm. [flat 1/2 skin, 1/2 skel., tissues]

7 June 1984

- 70 ad ♂ Loxia curvirostra #043 = "76"  
Captured 27 May 1983 as juvenile  
in streaked plumage, Poverty Hollow.  
In with 011 and 019 since capture date.  
Testes ~2.5mm. [Full skel, tissues]



J. Groth  
1984

catalog

14.

Lab birds, Blacksburg, Virginia

June 7, 1984

- 71 ad ♂ Loxia curvirostra # 011  
Captured 1 March 1983 on Brush Mt,  
with # 010 and 012. Caged with  
019 and 043 since 27 May 1983.  
Testes ~ 2.5 mm. [full skel, tissues]
- 72 ad ♀ Loxia curvirostra. # 045  
Captured as young juvenile on 27 May 1983.  
Put in with 024, 025 in Parker's  
Lab 'til Aug 17 1983, then into main lab.  
Ovary ~ 3.5 mm. [full skel, tissues]
- 73 ad ♂ Loxia curvirostra # 012 = ("45" on tape)  
Captured 1 March 1983 on Brush Mt,  
with 010, 011 as flock. In with 038  
since 27 May 1983. [full skel, tissues].  
Testes L 4.7 x 3.7  
R 4.2 x 3.6.
- 74 ad ♂ Loxia curvirostra # 019  
Captured 9 April 1983 on Brush Mt  
as loner. In with 011 and 043 since  
27 May 1983. Testes L 3.0 x 2.6  
R 2.5 x 2.3. [flat 1/2 skin,  
1/2 skel, tissues].
- 75 ad ♀ Loxia curvirostra # 038  
Captured 18 May 1983 on Brush Mt.  
with # 037 as pair. Put in  
with # 012 since 27 May 1983.  
Ovary ~ 5 mm. [full skel, tissues]



J. Groth  
1984Poverty Hollow, 4 mi NW Blacksburg, Virginia7 June 198476 ad ♂ Loxia curvirostra # 205 wt 33.2

Captured 6 June 1984 as lone bird.

Testes L  $5.0 \times 4.7$   
R  $4.5 \times 4.4$ . [Flat  $\frac{1}{2}$  skin,  $\frac{1}{2}$  skel., tissues]77 ad ♂ Loxia curvirostra # 206 wt 35.4Captured 8 June 1984, found alone in net. Killed 14 June 1984. <sup>little fat.</sup>Testes L  $4.5 \times 4.1$   
R  $4.1 \times 3.7$ . [Flat  $\frac{1}{2}$  skin,  $\frac{1}{2}$  skel., tis]2 mi N Mountain Lake, Virginia16 June 198478 ad ♂ Vireo solitarius # 9 wt 16.3Testes L  $5.2 \times 4.6$   
R  $4.2 \times 4.2$  Wing 80.4.

[full skel., tissues]

79 ad ♂ Vireo solitarius # 10 wt 16.4Testes L  $5.5 \times 4.0$   
R  $3.4 \times 3.3$  Wing 81.9

[full skel., tissues]

80 ad ♂ Vireo solitarius # 11 wt 16.8Testes L  $5.8 \times 4.7$   
R  $4.7 \times 3.7$  Wing 80.6

[full skel., tissues]

81 ad ♂ Vireo solitarius # 12 wt 14.9Testes L  $5.3 \times 3.9$   
R  $4.1 \times 3.8$  Wing 75.9.

[full skel., tissues]





J. Groth  
1984Poverty Hollow, 4 mi NW Blacksburg, Virginia  
17 June 1984

- 82 juv ♂ Loxia curvirostra #207 wt 31.3  
Captured alone. Testes L 1.7  
R 1.4.  
[flat 1/2 skin, 1/2 skel, tissues]
- 83 juv ♂ Loxia curvirostra #208 wt 29.4  
Captured with #209. Testes L 1.6  
R 1.2.  
Seen with one other bird (ad ♀?).  
[flat 1/2 skin, 1/2 skel., tissues].
- 84 juv ♂ Loxia curvirostra #209. wt 32.9  
Captured with #208. Testes L 3.2  
R 2.9.  
[flat 1/2 skin, 1/2 skel., tissues].

~1200 ft.

Top of Roan Mt., North Carolina  
20 June 1984

- 85 ad ♂ Vireo solitarius #13 wt 19.0  
Testes L 5.4 x 3.8  
R 4.0 x 4.0 Wing 80.5.  
Pair with #14, in nest 166 847.  
[full skel., tissues]
- 86 ad ♀ Vireo solitarius #14 wt 20.7.  
Ovary 888. Wing 79.8. Pair w/ #13.  
Nest - 166 847. [full skel., tissues]
- 87 Nest, 4 eggs. Vireo solitarius  
Pair 166 846, 85. 3 m up in a  
Fraser Fir.
- 88 juv ♀ Loxia curvirostra #210 wt 31.1  
Found in net with #211, 212, 213.  
Ovary 3.5 mm. [Flat 1/2 skin, 1/2 skel., tissues]



J. Groth  
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catalog

17.

<sup>elev 6100 ft.</sup>  
Top of Roan Mt., North Carolina

20 June 1984

- 89 juv ♀ Loxia curvirostra # 211 wt 25.4  
Found in net with 210, 212, 213.  
Ovary 2.9 mm. [Flat 1/2 skin, 1/2 skel, tissues]
- 90 juv ♀ Loxia curvirostra # 212 wt 26.7  
Found in net with 210, 211, 213.  
Ovary 3.5 mm. [Flat 1/2 skin, 1/2 skel, tissues]
- 91 juv ♂ Loxia curvirostra # 213 wt 29.5  
Found in net with 210, 211, 212.  
Testes L 3.3, R 3.0. [Flat 1/2 skin, 1/2 skel, tissues]

21 June 1984 (Roan Mt.)

- 92 subad ♀ Loxia curvirostra # 214 wt 24.4  
Lone bird. Belly streaks. Ovary 4.2 mm.  
[Flat 1/2 skin, 1/2 skel, tissues]
- 93 subad ♀ Loxia curvirostra # 215 wt 27.4  
With # 216 at capture. Belly streaks.  
Ovary 5.5 mm, largest ovum 1.2 mm.  
[Flat 1/2 skin, 1/2 skel, tissues].
- 94 ad ♂ Loxia curvirostra # 216 wt 31.4  
With # 215 at capture - pair.  
Testes L 4.7 x 4.1  
R 4.4 x 3.6. [Flat 1/2 skin, 1/2 skel, tissues]



J. Groth  
1984

catalog

18.

2 mi N. Mt. Lake, Virginia  
22 June 1984

- 95 ad ♀ Vireo solitarius #15 wt. 19.4  
Ovary ~~xxx~~ largest follicle = 1.9 mm.  
Wing = 78.9 mm. [full skel, tissues]

Pacer's Gap, 2 mi W Mt. Lake, Virginia  
24 June 1984

- 96 ad ♀ Vireo solitarius #16 wt. 17.8  
Ovary ~~xxx~~ largest follicle = 1.8 mm.  
Wing = 75.7 mm. [full skel, tissues]
- 97 ad ♂ Vireo solitarius #17 wt 17.1  
Testes  $\begin{matrix} L & 5.7 \times 3.6 \\ R & 3.5 \times 3.3 \end{matrix}$  . Wing = 78.1 mm.  
[full skel, tissues]

Poverty Hollow, 5 mi NW Blacksburg, Virginia  
3 July 1984

- 98 ad ♂ Vireo solitarius #18 wt 16.7  
Testes  $\begin{matrix} L & 5.3 \times 3.9 \\ R & 3.9 \times 3.4 \end{matrix}$  Wing = 76.6.  
[full skel., tissues]

Lab bird, Blacksburg, Virginia  
10 July 1984

- 99 ad ♀ Loxia curvirostra #004 wt —  
Found dead in cage. Originally  
captured Feb 24, 1983 as lone bird.  
[Full skel., tissues]



J. Groth  
1984

Catalog

19.

Univ. Calif. Berkeley Field Station, elev. 1300 ft.,  
Alameda Co., Calif. August 26

skin +  
part. skel.  
100  
171017

♂ red crossbill (bird 218 on tape) wt. 30.1 gm.

Testes L  $1.8 \times 1.7$   
R  $1.6 \times 1.6$  . Mod. fat. Captured Aug. 25, 1984.

skin +  
part. skel.  
101  
171018

♂ red crossbill (bird 219 on tape) wt. 28.9 gm.

Testes L  $2.0 \times 1.7$   
R smaller . Mod. fat. Captured Aug. 25, 1984.

skin +  
part. skel.  
102  
171019

♂ red crossbill (bird 220 on tape) wt. 31.9 gm.

Testes L  $1.7 \times 1.5$   
R  $1.6 \times 1.5$  . Mod. fat. Captured Aug 25, 1984

skin +  
part. skel.  
103  
171020

juv ♂ red crossbill (bird 221 on tape) wt. 29.8 gm.

Testes L  $1.8 \times 1.8$   
R smaller . Heavy fat. Captured Aug 25, 1984

skin +  
part. skel.  
104  
171021

juv O? red crossbill (bird 222 on tape) wt. 25.5 gm.

Gonad not found. Little fat. Captured Aug. 25, 1984

skin +  
part. skel.  
105  
171022

♀ red crossbill (bird 223 on tape) wt. 24.6 gm.

Ovary  $3.7 \times 2.7$  ~~3.7~~. Little fat. Captured Aug. 25, 1984

skin +  
part. skel.  
106  
171023

♀ red crossbill (bird 224 on tape) wt. 27.2 gm.

Ovary 6mm. . Little fat. Captured Aug. 25, 1984

skin +  
part. skel.  
107  
171024

♂ red crossbill (bird 225 on tape) wt. 29.3 gm.

Testes L  $1.7 \times 1.6$   
R  $1.6 \times 1.4$  . Little fat. Captured Aug. 25, 1984

skin +  
part. skel.  
108  
171025

♂ red crossbill (bird 226 on tape) wt. 32.2 gm.

Testes L  $3.1 \times 2.7$   
R  $2.2 \times 2.0$  . Heavy fat. Captured Aug 25, 1984

August 28

skin +  
part. skel.  
109  
171026

♂ red crossbill (bird 217 on tape) wt. 31.3 gm.

Testes L  $1.8 \times 1.7$   
R  $1.8 \times 1.6$  . Mod. fat. Captured Aug. 25, 1984

skin +  
part. skel.  
110  
171027

♀ red crossbill (bird 227 on tape) wt. not taken.

Ovary  $4.6 \times 2.3$  . Heavy fat. Captured Aug. 26, 1984.





J. Groth  
1984

catalog

20.

Sagehen Creek Field Station, elev. 6400 ft., Nevada Co., Calif.

October 13

skint  
part. skel.  
111  
170979

♂ red crossbill (bird 235 on tape) wt. 33.1 gm.

Testes L 2.2  
R 1.6 . No fat. Shot, crop empty.

October 14

skint  
part. skel.  
112  
171002

♂ red crossbill (bird 253 on tape) wt. 34.3 gm.

Testes L 1.1  
R 0.9 . Mod fat. Shot today.

skint  
part. skel.  
113  
170980

♂ red crossbill (bird 249 on tape) wt. 37.9 gm.

Testes L 1.3  
R 1.1 . Little fat. Captured Oct. 13, 1984.

skint  
part. skel.  
114  
170981

♀ red crossbill (bird 240 on tape) wt. 35.6 gm.

Ovary 4.3 x 3.7. Moderate fat. Captured Oct. 13, 1984.

skint  
part. skel.  
115  
170982

♂ red crossbill (bird 248 on tape) wt. 38.4 gm

Testes L 1.2  
R 1.2 . Mod. fat. Captured Oct. 13, 1984

skint  
part. skel.  
116  
170983

♀ red crossbill (bird 230 on tape) wt. 32.0 gm.

Ovary 4.5 x 3.9. Little fat. Captured Oct 13, 1984

skint  
part. skel.  
117  
170984

♂ red crossbill (bird 247 on tape) wt. 34.7 gm.

Testes L 1.5 x 1.3  
R 1.3 x 1.2 . No fat. Captured Oct. 13, 1984.

skint  
part. skel.  
118  
170985

♀ red crossbill (bird 231 on tape) wt. 33.4 gm.

Ovary 3.7 x 3.1 . Little fat. Captured Oct. 13, 1984.

skint  
part. skel.  
119  
170986

♀ red crossbill (bird 234 on tape) wt. 32.7 gm.

Ovary 3.8 x 3.0. No fat. Captured Oct. 13, 1984.

skint  
part. skel.  
120  
170987

♂ red crossbill (bird 252 on tape) wt. 32.7 gm.

Testes L 1.1  
R 1.0 . No fat. Captured Oct. 13, 1984

skint  
part. skel.  
121  
170988

♀ red crossbill (bird 236 on tape) wt. 34.5 gm.

Ovary 4.7 x 3.6. No fat. Captured Oct. 13, 1984

skint  
part. skel.  
122  
170989

♂ red crossbill (bird 237 on tape) wt. 34.4 gm.

Testes L 1.6 x 1.5  
R 1.3 x 1.2 . No fat. Captured Oct. 13, 1984.

skint  
part. skel.  
123  
170990

♂ red crossbill (bird 233 on tape) wt. 32.6 gm.

Testes L 1.0  
R 1.0 . No fat. Captured Oct. 13, 1984.



J. Groth  
1984

catalog

21.

Sagehen Creek Field Station, elev. 6400 ft., Nevada Co., Calif.  
October 14 cont'd

skint.  
part. skel.  
124  
170991

♂ red crossbill (bird 239 on tape) wt. 33.3 gm.

Testes L 1.2 x 1.0  
R 0.9 x 0.9. No fat. Captured Oct. 13, 1984.

skint.  
part. skel.  
125  
170992

♀ red crossbill (bird 244 on tape) wt. 30.9 gm.

Ovary 3.0 x 2.1. No fat. Died in cage. <sup>captured</sup> Oct 13, 1984.

skint.  
part. skel.  
126  
170993

♀ red crossbill (bird 241 on tape) wt. 31.9 gm.

Ovary 5.3 x 3.6. Little fat. Captured Oct. 13, 1984

skint.  
part. skel.  
127  
170994

♂ red crossbill (bird 238 on tape) wt. 32.8 gm.

Testes L 1.8 x 1.4,  
R 1.5 x 1.3. No fat. Captured Oct. 13, 1984.

skint.  
part. skel.  
128  
170995

♀ red crossbill (bird 232 on tape) wt. 31.1 gm.

Ovary 3.8 x 2.8. No fat. Captured Oct. 13, 1984.

skint.  
part. skel.  
129  
171003

♀ red crossbill (bird 266 on tape) wt. 34.2 gm.

Ovary 4.7 x 3.0. Moderate fat.

skint.  
part. skel.  
130  
171004

♂ red crossbill (bird 265 on tape) wt. <sup>32.6</sup>~~32.0~~ gm.

Testes L 1.0  
R 0.8. Little fat.

skint.  
part. skel.  
131  
171005

♀ red crossbill (bird 263 on tape) wt. 31.8 gm.

Ovary 4.7 x 4.0. Little fat.

skint.  
part. skel.  
132  
171006

♂ red crossbill (bird 260 on tape) wt. 36.7 gm.

Testes L 1.3  
R 1.3. Little fat.

skint.  
part. skel.  
133  
171007

♀ red crossbill (bird 255 on tape) wt. 31.0 gm.

Ovary 4.3 x 4.0. Little fat.

Oct. 18

skint.  
part. skel.  
134  
170996

♂ red crossbill (bird 246 on tape) wt. 38.4 gm.

Testes L 1.4  
R 1.2. Little fat. Captured Oct. 13, 1984.

skint.  
part. skel.  
135  
170997

♂ red crossbill (bird 250 on tape) wt. 35.7 gm.

Testes L 1.7  
R 1.7. Little fat. Captured Oct. 13, 1984

skint.  
part. skel.  
136  
170998

♂ red crossbill (bird 251 on tape) wt. 41.1 gm.

Testes L 1.5  
R 1.6. Moderate fat. Captured Oct. 13, 1984.



J. Groth  
1984

catalog

22.

Sagehen Creek Field Station, elev. 6400 ft., Nevada Co.,  
Calif. October 18

- skin +  
part. skel.  
137 ♂ red crossbill (bird 254 on tape) wt. 31.9 gm.  
171008 Testes L 1.2  
R 1.1. No fat. Captured Oct. 14, 1984.
- skin +  
part. skel.  
138 ♂ red crossbill (bird 257 on tape) wt. 34.1 gm.  
171009 Testes L 1.2  
R 1.0. Little fat. Captured Oct. 14, 1984.
- skin +  
part. skel.  
139 ♀ red crossbill (bird 261 on tape) wt. 31.5 gm.  
171010 Ovary 4.7 x 3.5. No fat. Captured Oct. 14, 1984.
- skin +  
part. skel.  
140 ♂ red crossbill (bird 262 on tape) wt. 32.0 gm.  
171011 Testes L 1.3  
R 1.2. Little fat. Captured Oct. 14, 1984.
- skin +  
part. skel.  
141 ♂ red crossbill (bird 264 on tape) wt. 34.5 gm.  
171012 Testes L 1.2  
R 1.2. Little fat. Captured Oct. 14, 1984.

October 21

- skin +  
part. skel.  
142 ♂ red crossbill (bird 259 on tape) wt. 25.8 gm.  
171013 Testes L 1.0  
R 1.1. Little fat. Captured Oct. 14, 1984.
- skin +  
part. skel.  
143 ♀ red crossbill (bird 258 on tape) wt. 26.1 gm.  
171014 Ovary 3.5 x 3.0. Little fat. Captured Oct. 14, 1984.
- skin +  
part. skel.  
144 ♂ red crossbill (bird 256 on tape) wt. 34.2 gm.  
171015 Testes L 1.1 x 0.9  
R 0.9 x 0.9. Little fat. Captured Oct. 14, 1984.
- skin +  
part. skel.  
145 ♀ red crossbill (bird 242 on tape) wt. 31.0 gm.  
170999 Ovary 4.8 x 3.3. Little fat. Captured Oct. 13, 1984.
- skin +  
part. skel.  
146 ♂ red crossbill (bird 243 on tape) wt. 35.7 gm.  
171000 Testes L 1.3  
R 1.2. No fat. Captured Oct. 13, 1984.
- skin +  
part. skel.  
147 ♀ red crossbill (bird 245 on tape) wt. 36.5 gm.  
171001 Ovary 3.4 x 3.0 mm. Little fat. Captured Oct. 13, 1984.



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Catalog

23.

Univ. Calif. Berkeley Field Station, elev. 1300 ft.  
Alameda Co., Calif. October 21, 1984

skint.  
part. skel.  
148  
171028

♀ red crossbill (bird 267 on tape) wt. 26.7 gm.

Ovary 3.6 x 3.2. Little fat.

skint.  
part. skel.  
149  
171029

♀ red crossbill (bird 268 on tape) wt. 32.7 gm.

Ovary 4.0 x 3.7. Moderate fat.

skint.  
part. skel.  
150  
171030

♂ red crossbill (bird 269 on tape) wt. 24.9 gm.

Testes L 1.6 x 1.2  
R 1.3 x 1.0. No fat.

skint.  
part. skel.  
151  
171031

♀ red crossbill (bird 270 on tape) wt. 28.4 gm.

Ovary 3.8 x 3.2. Little fat.

skint.  
part. skel.  
152  
171032

♀ red crossbill (bird 271 on tape) wt. 25.6 gm.

Ovary 3.7 x 3.0. No fat.

skint.  
part. skel.  
153  
171033

♂ red crossbill (bird 272 on tape) wt. 27.9 gm.

Testes L 1.0  
R 1.0. Little fat.

skint.  
part. skel.  
154  
171034

♂ red crossbill (bird 275 on tape) wt. 35.3 gm.

Testes L 1.3  
R 1.2. ~~little~~ moderate fat.

skint.  
part. skel.  
155  
171035

♂ red crossbill (bird 276 on tape) wt. 32.2 gm.

Testes L 1.3  
R 1.1. ~~little~~ <sup>NP</sup> fat.

skint.  
part. skel.  
156  
171036

♂ red crossbill (bird 277 on tape) wt. 32.4 gm.

Testes L 1.1  
R 1.1. ~~little~~ Little fat.

November 1

skint.  
part. skel.  
157  
171037

♀ red crossbill (bird 228 on tape) wt. 34.0 gm.

Ovary 3.6 x 3.6. <sup>No</sup> fat. Captured October 27, 1984.

skint.  
part. skel.  
158  
171038

♀ red crossbill (bird 229 on tape) wt. not taken

Ovary 3.2 x 2.7. Mod. fat. Captured October 27, 1984.

November 4

skint.  
part. skel.  
159  
171039

♂ red crossbill (bird 278 on tape) wt. 35.1 gm.

Testes L 1.2  
R 1.0. Little fat. Captured November 1, 1984.





J. Groth  
1984

catalog

24.

Univ. Calif. Berkeley Field Station elev. 1300 ft.,  
Alameda Co., Calif. November 4

skin +  
part. skel.  
160  
171040

♀ red crossbill (bird 279 on tape) wt. 34.8 gm.  
Ovary 4.9 x 3.8 gm. Moderate fat. Captured Nov. 1, 1984

skin +  
part. skel.  
161  
171051

♀ American gold finch. Ovary 2.3 x 1.7 mm, wt. 11.4 gm.

November 17, 1984

skin +  
part. skel.  
162  
171041

♀ red crossbill (bird 280 on tape) wt. 26.3 gm.  
Ovary 3.5 x 2.6. Moderate fat.

skin +  
part. skel.  
163  
171042

♂ red crossbill (bird 284 on tape) wt. 26.8 gm.  
Testes L 1.2 x 1.1  
R 1.1 x 1.0. Little fat.

skin +  
part. skel.  
164  
171043

♂ red crossbill (bird 283 on tape) wt. 25.7 gm.  
Testes L 1.1 x 1.1  
R 1.0 x 1.0. Little fat.

skin +  
part. skel.  
165  
171044

♂ red crossbill (bird 281 on tape) wt. 28.6 gm.  
Testes L 1.1 x 1.1  
R 1.1 x 1.1. Moderate fat.

November 18

skin +  
part. skel.  
166  
171045

♀ red crossbill (bird 282 on tape) wt. 27.4 gm.  
Ovary 3.8 x 2.8. Little fat. Captured Nov. 17, 1984

skin +  
part. skel.  
167  
171046

♂ red crossbill (bird 285 on tape) wt. 26.6 gm.  
Testes L 1.1  
R 1.0. Little fat. Captured Nov 17, 1984.

November 25

skin +  
part. skel.  
168  
171047

♂ red crossbill (bird 288 <sup>not</sup> recorded on tape) wt. 32.3 gm.  
Testes L 1.0  
R 1.0. Little fat. Heart as type 2.

skin +  
part. skel.  
169  
171048

♀ red crossbill (bird 289 not recorded on tape) wt.   
Ovary 4.1 x 2.8. Moderate fat. Heard as type 3.

170

pine siskin - tissues only. wt. 13.2 gm.

skin +  
part. skel.  
171  
171049

♂ red crossbill (bird 286 on tape) wt. 33.5 gm.  
Testes L 1.6 x 1.1  
R 1.4 x 0.9. Moderate fat.

skin +  
part. skel.  
172  
171050

♂ red crossbill (bird 287 on tape) wt. 30.3 gm.  
Testes L 1.2  
R 1.1. No fat.



J. Groth  
1984

Etna Springs, Pope Valley, Napa Co., Calif.  
Sept. 15, 1984

skin 173 imm ♂ starling. Little fat. Testes  $\begin{matrix} L 1.5 \times 1.1 \\ R 1 \times 1 \end{matrix}$  } black wt. 67 gm.  
Collected by R.E. Jones.

Inverness Ridge,  $\frac{3}{2}$  mi. NW Inverness, elev. 300 ft.,  
Marin Co., Calif. Dec. 27

skin+  
part. skel. 174. ♂ red crossbill (bird 294 on tape) wt. 28.4 gm.  
170971 Testes  $\begin{matrix} L 0.9 \\ R 0.8 \end{matrix}$ . Little fat.

skin+  
part. skel. 175 ♂ red crossbill (bird 290 on tape) wt. 32.4 gm.  
170972 Testes  $\begin{matrix} L 1.1 \\ R 1.0 \end{matrix}$ .

skin+  
part. skel. 176 ♂ red crossbill (bird 291 on tape) wt. 33.9 gm.  
170973 Testes  $\begin{matrix} L 1.5 \\ R 1.1 \end{matrix}$ . Little fat.

Dec. 28

skin+  
part. skel. 177 ♀ red crossbill (bird 295 on tape) wt. not taken  
170974 Ovary 4.6 x 3.5. Little fat. Captured Dec. 27, 1984

skin+  
part. skel. 178 ♂ red crossbill (bird 296 on tape) wt. 23.8 gm.  
170975 Testes  $\begin{matrix} L 1.2 \\ R 1.0 \end{matrix}$ . No fat. Captured Dec. 27, 1984

skin+  
part. skel. 179 ♂ red crossbill (bird 292 on tape) wt. 34.2 gm.  
170976 Testes  $\begin{matrix} L 1.4 \\ R 1.3 \end{matrix}$ . Little fat. Captured Dec. 27, 1984

skin+  
part. skel. 180 ♂ red crossbill (bird 293 on tape) wt. 29.9 gm.  
170977 Testes  $\begin{matrix} L 0.8 \\ R 0.7 \end{matrix}$ . No fat. Captured Dec. 27, 1984.

skin+  
part. skel. 181 ♂ red crossbill (bird 297 on tape) wt. 23.8 gm.  
170978 Testes  $\begin{matrix} L 1.2 \\ R 1.0 \end{matrix}$ . No fat. Captured Dec. 27, 1984.

Skegg's Point, 4 mi. W Woodside, elev. 1800 ft.,  
San Mateo Co., Calif. December 28

skin+  
part. skel. 182 ♂ red crossbill (bird 299 on tape) wt. 26.6 gm.  
171016 Testes  $\begin{matrix} L 1.1 \\ R 1.0 \end{matrix}$ . Little fat.



J. Groth  
1985

catalog

26.

Bolinas Ridge 4 mi. E Bolinas, elev. 1600 ft., Marin Co., Calif.  
March 16, 1985

skin +  
part. skel.  
184

171094

♂ red crossbill (bird 303 on tape)

wt. 27.2 gm.

Testes L  $1.5 \times 1.4$   
R  $1.5 \times 1.3$ . No fat.

skin +  
part. skel.  
185

171095

♂ red crossbill (bird 304 on tape)

wt. 29.9 gm.

Testes L  $1.7 \times 1.6$   
R  $1.5 \times 1.5$ . Little fat.

skin +  
part. skel.  
186

171096

♀ red crossbill (bird 307 on tape)

wt. 27.8 gm.

Ovary  $3.6 \times 3.1$ . No fat.

skin +  
part. skel.  
187

171097

♀ red crossbill (bird 308 on tape)

wt. 26.4 gm.

Ovary  $4.0 \times 3.6$ . No fat.

skin +  
part. skel.  
188

171098

♂ red crossbill (bird 309 on tape)

wt. 31.1 gm.

Testes L  $2.0 \times 1.4$   
R  $1.7 \times 1.1$ . Little fat.

skin +  
part. skel.  
189

171099

♂ red crossbill (bird 310 on tape)

wt. 28.3 gm.

Testes L  $1.8 \times 1.3$   
R  $1.6 \times 1.3$ . No fat.

skin +  
part. skel.  
190

171100

♂ red crossbill (bird 311 on tape)

wt. 24.3 gm.

Testes L  $1.3 \times 1.0$   
R  $1.0 \times 1.0$ . No fat.

skin +  
part. skel.  
191

171101

♂ red crossbill (bird 312 on tape)

wt. 28.7 gm.

Testes L  $1.2 \times 1.1$   
R  $1.1 \times 1.0$ . No fat.

skin +  
part. skel.  
192

171102

♀ red crossbill (bird 313 on tape)

wt. 24.2 gm.

Ovary  $5.8 \times 3.5$ , largest follicle = 0.8 mm. No fat.

skels.  
193

- 206. Numbers given to 6 white-winged and  
8 red crossbill specimens having numbers 14737 -  
14750 of Walter Boek. Became part of AMNH  
skeletal collection.



# Catalog

		14.2	1.7	4.7	5.3	8.2	9.4	18.6	88.0	#9	
		cn	bd	du	wu	wl	ll	tr	wg	wt.	
66											crop empty
17	14741	4.8	2.1		2.2	2.2			29.7		fat mod.
		ad. ♂ L pink W.W. Testes L 1.2 R 1.2									
15	14747	11.8	1.9	4.4	5.1	8.8	9.7	17.6	80.5	#8	28.1 wings & ovary legs broken
		ovary 3.5 x 2.8 ad ♀ L green Red throat w/ yellow mod. fat crop empty									
16	14750	13.1	1.8	4.6	5.5	8.3	9.8	18.4	81.3	#8, 9	24.6 many bones broken
		ad ♀ R green Red ovary 3.5 x 2.8 mm									
13	14742	14.3	1.9	4.6	5.3	8.4	9.2	17.3	83.1	#9	25.5 R. wing broken
		ad ♀ R W.W. ovary 4.5 x 3.0 mm orange-yellow bump. blood under skin. little fat. R crop on									
14	14737	14.3	1.9	4.6	5.3	7.9	1.0.0	17.8	86.0	#9	23.7 tail mostly missing
		ad ♀ L W.W. ovary 3.9 x 2.6 mm no fat skull cracked wing broken									
	14743	12.0	1.9	4.6	6.2	8.5	9.6	19.0	82.2	#9	28.0
200		ad ♀ Red Xbill L gray throat ovary 3.2 x 3.5 W fat									
94	14738	15.6	1.9	4.7	5.3	8.5	9.4	18.6	89.5	#8	28.9
		Testes L 1.2 mm R 1.1 mm (R) pink ad ♂ W.W. crop empty little fat									
201	14740	14.0	8.0	4.7	5.1	8.0	9.5	17.2	86.0	#7	25.5
		ad ♀ W.W. (R) ovary 3.7 x 3.1 no fat crop full saved									
99	14739	14.4	8.3	4.9	5.5	8.6	9.5	15.1	90.2	#9	29.3
		Testes L 1.5 x 1.4 R 1.5 x 1.5 (R) crop saved fat mod. pink ad ♂									





J. Groth  
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catalog

28.

cr. bl. dv. ww. w. ll. to. wj. wt.

202	14744	11.7	8.0	4.7	6.1	9.0	9.7	19.8	81.4 <sup>43</sup>	26.2	ovary 4.5 x 3.7 ad ♀ Red ⊕ little fat corp full-scent
204	14748	12.7	8.3	4.7	5.7	5.5	7.7	19.3	89.0	26.6	corp 1.0 x 0.8 dark orange-red <span style="border: 1px solid black;">NO TISSUE</span> little fat
203	14746	12.8	7.8	4.7	5.5	8.5	10.5	16.7	80.5 <sup>45</sup>	28.1	ad ♂ (L) dark orange-red little fat
206	14745	12.9	8.3	4.5	5.5	9.0	10.4	19.7	85.9	31.7	ad ♂ orange R testes 1.0mm little fat corp full-scent
205	14749	14.0	8.6	4.6	6.2	9.7	15.7	15.7	147.1	27.6	ad ♂ R little fat



J. Groth  
1985Bass Lake, 4 mi. E + 1 mi. S Oakhurst, elev. 3200 ft.,  
Madera Co., Calif. February 18skel. only  
207  
171139

♀ evening grosbeak. ovary 5.0 x 3.8 mm. wt. 41.6 gm.

Univ. Calif. Animal Behavior Station, Berkeley, Alameda  
Co., Calif. May 4skel. only  
208  
171057♀ red crossbill (bird "57" on tape) captured at  
Brush Mountain, 4 mi. NW Blacksburg, Montgomery Co.,  
Calif. on ovary 4.1 x 3.1 at deathskint  
part. skel.  
209  
171119♀ red crossbill (bird 301 on tape) wt. 26.0 gm.  
Ovary 4.9 x 3.1 mm. Captive bird, hatched around

January 20, 1985, sib of 166210 No fat.

skint  
part. skel.  
210  
171120♀ red crossbill (bird 302 on tape) wt. 26.7 gm.  
Ovary 4.9 x 3.4 mm. sib of 166209. No fat.Long Park, elev. 9200 ft. Chiricahua Mts., Cochise  
Co., Arizona May 22skint  
part. skel.  
211  
171135♂ red crossbill (bird 317 on tape) wt. 29.7 gm.  
Testes L 5.7 x 4.4  
R 2.7 x 2.5, No fat. Killed today.skint  
part. skel.  
212  
171136♂ red crossbill (bird 316 on tape) wt. 34.4 gm.  
Testes L 3.1 x 2.9  
R 1.9 x 1.9. No fat. Killed May 23, 1985.Lake Mt., 7 mi. NW Hyampom, elev. 3100 ft.,  
Humboldt Co., Calif. May 31skint  
part. skel.  
213  
171086♂ red crossbill (bird 319 on tape) wt. 26.6 gm.  
Testes L 3.4 x 2.7  
R 3.4 x 3.3. Little fat.skint  
part. skel.  
214  
171087♂ red crossbill (bird 320 on tape) wt. 28.4 gm.  
Testes L 2.2 x 2.1  
R 1.7 x 1.7. No fat.



J. Groth  
1985

catalog

30.

Lake Mt., 7 mi. NW Hyampom, elev. 3100 ft.,  
Humboldt Co., Calif. May 31 cont'd

skint +  
part. skel.  
215  
171088

♀ red crossbill (bird 322 on tape) wt. 27.3 gm.

Ovary  $5.2 \times 4.3$ . Little fat.

skint +  
part. skel.  
216  
171089

♂ red crossbill (bird 326 on tape) wt. 30.5 gm.

Testes L  $4.3 \times 4.0$   
R  $3.1 \times 2.8$ . Little fat.

skint +  
part. skel.  
217  
171090

♀ red crossbill (bird 321 on tape) wt. 26.0 gm.

Ovary  $4.4 \times 3.7$ . No fat.

skint +  
part. skel.  
218  
171091

♂ red crossbill (bird 324 on tape) wt. 25.2 gm.

Testes L  $2.0 \times 1.7$   
R  $1.6 \times 1.5$ . Little fat.

skint +  
part. skel.  
219  
171092

♂ red crossbill (bird 325 on tape) wt. 28.8 gm.

Testes L  $2.2 \times 2.0$   
R  $2.1 \times 1.9$ . Little fat.

skint +  
part. skel.  
220  
171093

♀ red crossbill (bird 323 on tape) wt. 25.1 gm.

Ovary  $4.8 \times 3.5$ . Little fat.

Base of Saddle Mt., 12 mi. E + 2 mi. S Chilquien, elev.

4700 ft., Klamath Co., Oregon 6 June 1985

skint +  
part. skel.  
221  
171074

♀ red crossbill (bird 330 on tape) wt. 31.3 gm.

Ovary  $5.6 \times 5.2$ . Heavy fat. Shot from tree.

skint +  
part. skel.  
222  
171078

♂ red crossbill (bird 331 on tape) wt. 29.8 gm.

Testes L  $1.6 \times 1.5$   
R  $1.5 \times 1.3$ . No fat.

skint +  
part. skel.  
223  
171079

♂ red crossbill (bird 333 on tape) wt. 31.1 gm.

Testes L  $2.3 \times 2.3$   
R  $2.5 \times 2.4$ . Little fat.

skint +  
part. skel.  
224  
171075

♂ red crossbill (bird 328 on tape) wt. 32.7 gm.

Testes L  $3.6 \times 3.0$   
R  $3.9 \times 3.0$ . Little fat. Captured June 6, 1985

skint +  
part. skel.  
225  
171076

♂ red crossbill (bird 329 on tape) wt. 35.4 gm.

Testes L  $2.2 \times 2.0$   
R  $2.0 \times 2.0$ . Little fat. Captured June 6, 1985



J. Groth  
1985

catalog

31.

Base of Saddle Mt., 12 mi. E + 2 mi. S Chilquien, elev.  
4700 ft., Klamath Co., Oregon June 7 cont'd

skin +  
part. skel.  
226  
171080

♂ red crossbill (bird 332 on tape) wt. 31.3 gm.  
L 2.1 x 1.7  
Testes R 1.8 x 1.6 Little fat.

skin +  
part. skel.  
227  
171083

♂ red crossbill (bird 335 on tape) wt. 37.2 gm.  
L 2.4 x 2.0  
Testes R 2.2 x 2.0 Moderate fat.

skin +  
part. skel.  
228  
171084

♀ red crossbill (bird 336 on tape) wt. 31.5 gm.  
Ovary 5.0 x 3.6 Little fat.

skin +  
part. skel.  
229  
171085

♂ red crossbill (bird 337 on tape) wt. 32.2 gm.  
L 3.8 x 3.5  
Testes R 3.4 x 3.2 Little fat.

June 8

skin +  
part. skel.  
230  
171081

♂ red crossbill (bird 338 on tape) wt. 33.2 gm.  
L 2.2 x 2.0  
Testes R 2.1 x 2.0 Little fat. Captured June 7, 1985.

skin +  
part. skel.  
231  
171082

♀ red crossbill (bird 334 on tape) wt. 33.3 gm.  
Ovary 4.4 x 3.5. Moderate fat. Captured June 7; died in cage.

Elder Mountain, 3 mi. E + 1 mi. N Takilma, elev. 3500 ft.,  
Josephine Co., Oregon 19 June

skin +  
part. skel.  
232  
171070

♀ red crossbill (bird 339 on tape) wt. 27.8 gm.  
Ovary 5.0 x 3.6. No fat. Captured June 18, 1985.

skin +  
part. skel.  
233  
171071

♀ red crossbill (bird 340 on tape) wt. 27.2 gm.  
Ovary 5.5 x 3.7. Little fat.

skin +  
part. skel.  
234  
171072

♀ red crossbill (bird 342 on tape) wt. 35.0 gm.  
Ovary 5.5 x 3.9. Heavy fat.

skin +  
part. skel.  
235  
171073

♂ red crossbill (bird 341 on tape) wt. 33.1 gm.  
L 3.1 x 3.0  
Testes R 2.7 x 2.6 Moderate fat.





J. Groth  
1985

catalog

32.

Copper City, 7 mi. NW Alder Springs, elev. 5900 ft.,  
Glenn Co., Calif. June 25

skint.  
part. skel.  
236  
171113

♀ red crossbill (bird 343 on tape) wt. 36.3 gm.

Ovary  $10.5 \times 8.2$ . Found on nest. Moderate fat. <sup>Male of</sup> JGG 237

skint.  
part. skel.  
237  
171114

♂ red crossbill (bird 344 on tape) wt. 33.8 gm.

Testes  $L 5.3 \times 4.3$   
 $R 4.2 \times 4.0$ . Moderate fat. Fed JGG 236 on nest.

Univ. Calif. Animal Behavior Station, Berkeley,  
Alameda Co., Calif. July 10

skint.  
part. skel.  
238  
171058

♂ red crossbill (bird "43" on tape) captured at  
Brush Mountain, 4 mi NW Blacksburg, Montgomery Co.,  
Calif. on March 1, 1983. Died of unknown cause  
while nesting in captivity with bird "33" (on tape).  
Wt. at death = 33.5 gm.

Strayhorse Divide, 11 mi. S. + 1 mi. W Hannagan Meadow,  
elev. 7100 ft., Greenlee Co., Arizona July 27

skint.  
part. skel.  
239  
171123

♂ red crossbill (bird 347 on tape) wt. 30.9 gm.

Testes  $L 5.8 \times 5.2$   
 $R 4.7 \times 4.2$ . Little fat. In song. Shot after recording.

skint.  
part. skel.  
240  
171124

♂ red crossbill (bird 349 on tape) wt. 31.4 gm.

Testes  $L 4.0 \times 3.2$   
 $R 3.2 \times 2.6$ . Little fat.

skint.  
part. skel.  
241  
171125

♂ red crossbill (bird 352 on tape) wt. 31.7 gm.

Testes  $L 4.3 \times 3.8$   
 $R 4.7 \times 4.1$ . Little fat. Mate of bird 350 (on tape)?

July 28

skint.  
part. skel.  
242  
171129

♂ red crossbill (bird 353 on tape) wt. 30.6 gm.

Testes  $L 2.8 \times 2.5$   
 $R 2.1 \times 2.0$ . No fat.

skint.  
part. skel.  
243  
171126

♀ red crossbill (bird 350 on tape) wt. 33.2 gm.

Ovary  $7.2 \times 5.6$ . 3 collapsed follicles. Brood patch.

Little fat. Captured July 27, 1985,



J. Groth  
1985

# catalog

33.

Stray Horse Divide, 11 mi. S + 1 mi. W Hannagan Meadow,  
elev. 7100 ft., Greenlee Co., Arizona July 28 cont'd

skint  
part. skel.  
244  
171127

♂ red crossbill (bird 351 on tape) wt. 31.6 gm.

L 4.8 x 4.3

Testes R 4.3 x 4.2, No fat. Captured July 27, 1985.

skint  
part. skel.  
245  
171130

♀ red crossbill (bird 354 on tape) wt. 28.0 gm.

ovary enlarged, 7.9 x 5.6 mm, largest follicle = 2.1 mm,

brood patch. No fat. Caught as lone bird.

July 29

skint  
part. skel.  
246  
171131

♂ red crossbill (bird 355 on tape) wt. 32.2 gm.

L 4.5 x 3.8

Testes R 4.0 x 3.3, Little fat. Crop full of pine seeds.

skint  
part. skel.  
247  
171128

♂ red crossbill (bird 348 on tape) wt. 33.3 gm.

L 5.1 x 5.0

Testes R 4.3 x 4.2, Little fat. Captured July 27, 1985.

August 1

skint  
part. skel.  
248  
171132

♂ red crossbill (bird 357 on tape) wt. 33.9 gm.

L 4.6 x 4.3

Testes R 4.4 x 4.1, Little fat. Mate of bird 356 on tape.

Crop contained on large insect larvae or pupa.

Love Mesa, 16 mi. N + 7 mi. E Nucla, elev. 8100 ft.,

Mesa Co., Colorado

Aug. 3

skint  
part. skel.  
249  
171068

♂ red crossbill (bird 359 on tape) wt. 33.1 gm.

L 3.6 x 3.3

Testes R 3.4 x 3.0, Little fat. Crop full of spruce seeds.

Stray Horse Divide, 11 mi. S + 1 mi. W Hannagan Meadow,

elev. 7100 ft., Greenlee Co., Arizona

Aug 3

skint  
part. skel.  
250  
171133

♂ red crossbill (bird 358 on tape) wt. 31.2 gm.

L 4.9 x 4.3

Testes R 4.2 x 3.8, Little fat. Captured August 1, 1985.

skint  
part. skel.  
251  
171134

♀ red crossbill (bird 356 on tape) wt. 35.3 gm.

Ovary 8.8 x 7.9 mm, largest follicles 2.7, 2.5, and 2.4 mm,

Moderate fat. Brood patch. Captured August 1, 1985.



J. Groth  
1985

# catalog

34.

White River Plateau, 10 mi. S + 2 mi. E Buford,  
elev. 10,000 ft., Rio Blanco Co., Colorado Aug. 5

skint  
part. skel.  
252  
171054

♂ pine grosbeak. Little fat. wt. 61.3 gm.  
L 10.0 x 7.3  
Testes R 7.7 x 7.7. Crop full of small green seeds.

Aug 6

skint  
part. skel.  
253  
171137

♀ white-winged crossbill. Brood patch. wt. 23.3 gm.  
Ovary 6.1 x 4.8, largest fol. = 1.6 mm. Little fat. Paired  
with an adult ♂ (not collected).

skint  
part. skel.  
254  
171138

♂ pine siskin. Little fat. Testes 0.9 mm. wt. 11.1 gm.

skint  
part. skel.  
255  
171061

♀ red crossbill (bird 364 on tape) wt. 32.6 gm.  
Ovary 5.7 x 4.2. No brood patch. Heavy fat.

skint  
part. skel.  
256  
171055

♀ pine grosbeak. Brood patch. wt. 63.1 gm.  
Ovary 5.2 x 4.0 mm. Little fat.

Aug 7

skint  
part. skel.  
257  
171062

♂ red crossbill (bird 363 on tape) wt. 33.0 gm.  
L 4.9 x 4.6  
Testes R 4.7 x 4.3. Little fat. Captured August 6, 1985.

skint  
part. skel.  
258  
171063

♂ red crossbill (bird 368 on tape) wt. 31.2 gm.  
L 4.3 x 4.1  
Testes R 4.4 x 3.6. No fat.

skint  
part. skel.  
259  
171064

♂ red crossbill (bird 365 on tape) wt. 31.7 gm.  
L 5.8 x 5.1  
Testes R 5.7 x 5.1. No fat. Mate of bird 366 on tape.

skint  
part. skel.  
260  
171056

♂ cassin's finch. No fat. Testes R 2.3 x 2.1. wt. 25.3 gm.

skint  
part. skel.  
261  
171065

♂ red crossbill (bird 367 on tape) wt. 32.9 gm.  
L 4.2 x 3.7  
Testes R 4.1 x 3.5. Little fat.

skint  
part. skel.  
262  
171066

♂ red crossbill (bird 369 on tape) wt. 34.1 gm.  
L 4.3 x 4.2  
Testes R 4.5 x 4.2. Moderate fat.

skint  
part. skel.  
263  
171053

♀ chipping sparrow. Ovary 3.4 x 2.5. Little fat. wt. 12.5 gm.



J. Groth  
1985White River Plateau, 10 mi. S + 2 mi. E Buford,  
elev. 10,000 ft., Rio Blanco Co., Colorado. Aug. 8.skint.  
part. skel.  
264  
171067♀ red crossbill (bird 366 on tape) wt. 34.4 gm.  
Ovary 5.4 x 5.0 mm, largest fol. = 1.4 mm, brood patch.  
Captured Aug. 7, 1985, with ♂ bird 365 on tape. Mod. fat.Cottonwood Creek Road, 17 mi. E Nucla, elev.  
9200 ft., Montrose Co., Colorado Aug. 8.skint.  
part. skel.  
265  
171069♀ red crossbill (bird 360 on tape) wt. 32.6 gm.  
Ovary 4.0 x 3.5. No brood patch. Little fat. Captured  
on August 4, killed today. No molt.White River Plateau, 10 mi. S + 2 mi. E Buford,  
elev. 10,000 ft., Rio Blanco Co., Colorado Aug. 5skint.  
part. skel.  
266  
171059♀ red crossbill (bird 361 on tape) wt. 34.0 gm.  
Ovary 5.5 x 5.0 mm, largest fol. = 1.6 mm. Brood patch.  
Little fat. Killed on August 5, 1985, but numbered  
JGG 253 by mistake, then changed to JGG 266  
and cataloged today.Univ. Calif., Berkeley, Alameda Co., Calif. Aug 15skel. only.  
267  
171121♂ juv red crossbill (bird 345 on tape) wt. not taken  
Testes L 1.3 x 0.9  
R 1.1 x 0.8. Found dead in cell at Animal  
Behavior Station. Captive-reared bird. Had been  
sick since Aug 12, 1985. Gall bladder huge, tumor  
on right pectoral muscle. Note: bill not  
crossed.





J. Grotl  
1985

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36.

Copper City, 7 mi. NW Alder Springs, elev. 5900 ft.,  
Glenn Co., Calif.

August 22

171052 skel. only  
268  
171052

♂ mountain chickadee. Testes  $L 1.4 \times 1.0$   
 $R 1.3 \times 1.0$ . wt. 12.4 gm.

Plumage worn, some molt on upper wing coverts,  
dorsal tract, femoral tracts,

skint  
part. skel.  
269  
171115

♂ red crossbill (bird 371 on tape) wt. 33.4 gm.  
Testes  $L 5.3 \times 4.4$   
 $R 4.0 \times 4.0$ . No fat. Crop empty.

Aug. 23

skint  
part. skel.  
270  
171117

♀ red crossbill (bird 372 on tape) wt. 35.5 gm.  
Ovary  $5.0 \times 4.0$ , largest fol. = 0.8 mm., somewhat enl.  
and follicular, brood patch. Mod. fat.

skint  
part. skel.  
271  
171116

♂ red crossbill (bird 370 on tape) wt. 33.1 gm.  
Testes  $L 5.1 \times 4.5$   
 $R 3.7 \times 3.6$ . Little fat. Captured Aug. 22, 1985.

skint  
part. skel.  
272  
171118

August 24  
♂ red crossbill (bird 373 on tape) wt. 34.7 gm.  
Testes  $L 5.6 \times 4.9$   
 $R 5.2 \times 4.7$ . Little fat.

Univ. Calif., Berkeley, Alameda Co., Calif.

skel.  
only  
273  
171077

♂ red crossbill (bird 327 on tape) wt. 33.4 gm.  
No gonadal data. Bird captured 6 June 1985 at  
Base of Saddle Mt., 12 mi. E + 2 mi. S Chilquini,  
elev. 4700 ft., Klamath Co., Oregon. Died in  
captivity

skel.  
only  
274  
171060

♂ red crossbill (bird 362 on tape) wt. 31.8 gm.  
No gonadal data. Bird captured 5 August 1985 at  
White River Plateau, 10 mi. S + 2 mi. E Buford, elev.  
10,000 ft., Rio Blanco Co., Colorado. Died in  
captivity

skint  
part. skel.  
275  
171122

♀ red crossbill (bird 315 on tape) Hatched in captivity  
about April 3, 1985; Died 5 September, ovary  $5.0 \times 3.8$  mm.



J. Groth  
1985

catalog

37.

Sagehen Creek Field Station, 3 mi. NW Hobart Mills,  
elev. 6400 ft., Nevada Co., Calif. October 26

skint.  
part. skel.  
276  
171103

♀ red crossbill (bird 381 on tape) wt. 33.3 gm.  
Ovary 5.7 x 3.7. Moderate fat.

skint.  
part. skel.  
277  
171104

♀ red crossbill (bird 379 on tape) wt. 33.6 gm.  
Ovary 4.3 x 3.7. Moderate fat.

skint.  
part. skel.  
278  
171105

♀ red crossbill (bird 380 on tape) wt. 34.6 gm.  
Ovary 4.5 x 3.4. Moderate fat.

skint.  
part. skel.  
279  
171106

♂ red crossbill (bird 375 on tape) wt. 32.2 gm.  
Testes  $\begin{matrix} L & 1.1 \\ R & 0.9 \end{matrix}$ . Little fat.

skint.  
part. skel.  
280  
171107

♀ red crossbill (bird 378 on tape) wt. 33.3 gm.  
Ovary 4.1 x 3.4. Little fat.

October 27

skint.  
part. skel.  
281  
171110

♀ red crossbill (bird 382 on tape) wt. 36.4 gm.  
Ovary 5.2 x 3.7. Moderate fat.

skint.  
part. skel.  
282  
171108

♂ red crossbill (bird 377 on tape) wt. 33.4 gm.  
Testes  $\begin{matrix} L & 1.4 \\ R & 1.3 \end{matrix}$ . Moderate fat. Captured Oct. 26, 1985.

skint.  
part. skel.  
283  
171109

♀ red crossbill (bird 376 on tape) wt. 29.6 gm.  
Ovary 5.1 x 3.8. Moderate fat. Captured Oct. 26, 1985.

skint.  
part. skel.  
284  
171111

October 28  
♂ red crossbill (bird 386 on tape) wt. 35.4 gm.  
Testes  $\begin{matrix} L & 1.2 \\ R & 1.2 \end{matrix}$ . Moderate fat. Captured Oct. 27, 1985.

skint.  
part. skel.  
285  
171112

♂ red crossbill (bird 383 on tape) wt. 31.1 gm.  
Testes  $\begin{matrix} L & 1.1 \\ R & 1.0 \end{matrix}$ . Little fat. Captured Oct. 27, 1985.



J. Groth  
1986

Catalog

38.

skint  
part. skel.  
286  
171279

Sagehen Creek Field Station, 3 mi. NW Hobart Mills, elev.  
6400 ft, Nevada Co., Calif. May 5

ad ♀ red crossbill (bird 388 on tape) wt. 33.2 gm.  
ovary 5.8 x 3.6. Little fat. Captured May 3, 1986.

skint  
287  
171161

Dorner's Camp, 14 mi. S Kelso, elev. 3900 ft,

San Bernardino Co., Calif. May 23

♂ black-throated sparrow little fat  
in song wt. 11.2 gm.

skel. only  
288  
171271

Mogollon Rim, 6 mi. SW Overgaard, Navajo Co.,  
elev. 7500 ft, Arizona May 25

♀ red crossbill wt. 32.0 gm.

skint  
part. skel.  
289  
171272

Strayhorse Divide, 11 mi. S + 1 mi. W Hannagan Meadow,  
elev. 7100 ft, Greelee Co., Arizona May 28

♀ red crossbill (bird 394 on tape) wt. 28.4 gm.  
Ovary 5.6 x 4.5. No fat. Brood patch. Captured on  
May 27, 1986.

skint  
part. skel.  
290  
171273

♂ red crossbill (bird 393 on tape) wt. 33.1 gm.  
L 3.3 x 2.5  
Testes R 3.4 x 3.0. No fat. Injury on L wing -  
cause unknown. Captured on  
May 27, 1986.

skint  
part. skel.  
291  
171274

♂ red crossbill (bird 392 on tape) wt. 33.0 gm.  
Testes R 3.8 x 3.8  
L 4.7 x 4.2. No fat. Captured May 27, 1986.

skint  
part. skel.  
292  
171275

♂ red crossbill (bird 390 on tape) wt. 31.7 gm.  
Testes L 1.6  
R 1.5. No fat. Captured May 27, 1986.

skint  
part. skel.  
293  
171188

Tennessee Pass, elev. 10,400 ft, Eagle Co.,  
Colorado June 4

♀ red crossbill (bird 397 on tape) wt. 33.0 gm.  
ovary 5.8 x 5.3. No brood patch. Mod. fat.



J. Groth  
1986

catalog

39.

Tennessee Pass, elev. 10,400 ft., Eagle Co.,  
Colorado

June 4 (cont'd)

skint.  
part. skel.  
294  
171189

♀ red crossbill (bird 398 on tape) wt. 33.2 gm.  
Ovary  $5.5 \times 4.0$ . Brood patch. Heavy fat.

skint.  
part. skel.  
295  
171190

♂ red crossbill (bird 396 on tape) wt. 34.2 gm.  
Testes L  $5.7 \times 4.7$   
R  $5.2 \times 4.6$ . Little fat.

skint.  
part. skel.  
296  
171191

♂ red crossbill (bird 399 on tape) wt. 35.6 gm.  
Testes L  $4.7 \times 4.3$   
R  $4.2 \times 4.1$ . Little fat.

skint.  
part. skel.  
297  
171192

♂ red crossbill (bird 400 on tape) wt. 35.1 gm.  
Testes L  $3.5 \times 2.8$   
R  $3.4 \times 2.6$ . Little fat.

skint.  
part. skel.  
298  
171193

♂ red crossbill (bird 401 on tape) wt. 32.8 gm.  
Testes L  $2.0 \times 1.8$   
R  $2.0 \times 1.9$ . Little fat.

skint.  
part. skel.  
299  
171194

♀ red crossbill (bird 402 on tape) wt. 32.4 gm.  
Ovary  $6.0 \times 4.2$ , follicular. Bare belly. Little fat.

June 5

skint.  
part. skel.  
300  
171195

♀ red crossbill (bird 403 on tape) wt. 33.9 gm.  
Ovary  $6.2 \times 5.1$ , follicular, largest = 1.9 mm. Brood patch. <sup>Mod.</sup> fat.

skint.  
part. skel.  
301  
171196

♂ red crossbill (bird 405 on tape) wt. 33.4 gm.  
Testes L  $3.8 \times 3.5$   
R  $3.6 \times 3.5$ . Little fat.

skint.  
part. skel.  
302  
171197

♂ red crossbill (bird 406 on tape) wt. 33.4 gm.  
Testes L  $4.3 \times 3.8$   
R  $4.0 \times 3.7$ . Little fat. Note: with bird 407 on tape.

skint.  
part. skel.  
303  
171198

♂ red crossbill (bird 404 on tape) wt. 33.7 gm.  
Testes L  $4.3 \times 3.5$   
R  $3.9 \times 2.8$ . Little fat.

June 6

skint.  
part. skel.  
304  
171199

♀ red crossbill (bird 407 on tape) wt. 33.1 gm.  
Ovary  $6.0 \times 5.8$  mm, 3 collapsed follicles. Active brood patch. <sup>Mod.</sup> fat. <sup>Captured June 5, 1986</sup>

June 7

skint.  
part. skel.  
305  
171200

♀ red crossbill (bird 408 on tape) wt. 31.4 gm.  
<sup>Mod.</sup> Little fat. Brood patch.  
Ovary  $7.0 \times 4.5$ , oviduct only, largest fol. = 1.9 mm.





J. Groth  
1986

catalog

40.

Tennessee Pass, elev. 10,400 ft., Eagle Co.,  
Colorado June 8

skint.  
part. skel.  
306  
171201

♂ red crossbill (bird 416 on tape) wt. 34.1 gm.

Gonad not found. Little fat.

skint.  
part. skel.  
307  
171202

♀ red crossbill (bird 417 on tape) wt. 33.4 gm.

Ovary  $6.5 \times 4.5$ . Bare belly. Little fat.

skint.  
part. skel.  
308  
171203

♂ red crossbill (bird 409 on tape) wt. 32.7 gm.

Testes L  $3.4 \times 3.2$   
R  $4.6 \times 4.4$ . Little fat.

skint.  
part. skel.  
309  
171204

♀ red crossbill (bird 418 on tape) wt. 36.6 gm.

Ovary  $5.8 \times 4.2$ , largest fol. = 1.5 mm, brood patch, heavy fat

skint.  
part. skel.  
310  
171205

♂ red crossbill (bird 415 on tape) wt. 34.2 gm.

Testes L  $4.2 \times 3.5$   
R  $3.1 \times 3.1$ . Little fat.

skint.  
part. skel.  
311  
171206

♂ red crossbill (bird 412 on tape) wt. 33.7 gm.

Testes L  $4.9 \times 4.0$   
R  $4.5 \times 4.0$ . Moderate fat.

skint.  
part. skel.  
312  
171207

♂ red crossbill (bird 413 on tape) wt. 35.3 gm.

Testes L  $3.3 \times 3.0$   
R  $3.4 \times 3.0$ . Moderate fat.

skint.  
part. skel.  
313  
171208

♀ red crossbill (bird 410 on tape) wt. 27.4 gm.

Ovary  $6.9 \times 4.3$ , largest fol. = 1.8, brood patch. No fat.

skint.  
part. skel.  
314  
171209

♂ red crossbill (bird 411 on tape) wt. 33.2 gm.

Testes L  $3.5 \times 3.0$   
R  $3.1 \times 3.0$ . Little fat.

skint.  
part. skel.  
315  
171210

♂ red crossbill (bird 414 on tape) wt. 34.5 gm.

Testes L  $3.1 \times 2.7$   
R  $2.7 \times 2.3$ . Little fat.

June 9

skint.  
part. skel.  
316  
171211

♂ red crossbill (bird 419 on tape) wt. 32.1 gm.

Testes L  $4.3 \times 4.1$   
R  $4.3 \times 4.0$ . Little fat. Captured June 8, 1986.

skint.  
part. skel.  
317  
171212

♀ red crossbill (bird 420 on tape) wt. 36.0 gm.

Ovary  $1.5 \times 4.2$ , No brood patch. Heavy fat. Captured June 8, 1986.



J. Gauth  
1986

Catalog

41.

Tornado Clearing, 17 mi. S. Jacob Lake, elev. 9100 ft.,  
Kaibab Plateau, Coconino Co., Ariz. June 11

skin +  
part. skel.  
318  
171276

♂ red crossbill (bird 422 on tape) wt. 35.3 gm.  
L 5.6 x 4.7  
Testes R 4.8 x 4.1. Moderate fat.

skin +  
part. skel.  
319  
171277

♂ red crossbill (bird 421 on tape) wt. 35.9 gm.  
L 5.1 x 4.4  
Testes R 4.9 x 4.4. Moderate fat.

June 12

skin +  
part. skel.  
320  
171278

♀ red crossbill (bird 423 on tape) wt. 30.7 gm.  
Ovary 5.3 x 4.3 <sup>non-</sup>follicular. No brood patch. Little fat.

Univ. Calif., Berkeley, Alameda Co., Calif. July 5

skin  
p. skel.  
321  
head  
in formalin  
171280  
Anat. 4921

juv ♀ red crossbill (bird 424 on tape) wt. 26.6 gm.  
Ovary 2.5 x 1.5 mm. Moderate fat. Lab-raised baby  
died from injuries -- found missing R leg

July 13

skin, body  
whole in  
formalin  
322  
171281  
Anat. 4922

juv ♂? red crossbill (bird 427 on tape) wt. 31.0 gm.  
Heavy fat. Killed today. Age of fledging.

in formalin  
323  
Anat. 4923  
in formalin  
324  
Anat. 4924

baby red crossbill } found dead May 19, 1986  
baby red crossbill } hatched about May 9 or 10  
sibs of JGG 321 and  
sibs (different nest) of JGG 322

1/2 mi. S + 1/2 mi. E Sea Lion Point, elev. 650 ft.,

Lane Co., Oregon July 24

skin +  
part. skel.  
325  
171231

♂ red crossbill (bird 430 on tape) wt. 29.3 gm.  
L 4.7 x 4.1  
Testes R 4.2 x 3.8. No fat.

skin +  
part. skel.  
326  
171232

♀ red crossbill (bird 431 on tape) wt. 28.4 gm.  
oviduct enlarged  
Ovary 8.3 x 6.7, largest ovum = 2.5 mm, brood patch. Little fat.

skin +  
part. skel.  
327  
171233

♂ red crossbill (bird 441 on tape) wt. 33.1 gm.  
L 4.6 x 4.4  
Testes R 4.3 x 4.2. Moderate fat.



J. Groth  
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42.

1/2 mi. S + 1/2 mi. E Sea Lion Point, elev. 650 ft., Lane Co., Oregon  
July 24 (cont'd)

skint  
part. skel.  
328  
171234

♀ red crossbill (bird 428 on tape) wt. 32.1 gm.

Oviduct enlarged, one 5mm yolky ovum, brood patch. Little fat.

skint  
part. skel.  
329  
171235

♂ red crossbill (bird 429 on tape) wt. 34.7 gm.

Testes L 6.5 x 5.5  
R 6.1 x 5.3 . Little fat.

skint  
part. skel.  
330  
171236

♂ red crossbill (bird 440 on tape) wt. 30.8 gm.

Testes L 5.1 x 4.8  
R 4.7 x 4.4 . Little fat.

skint  
part. skel.  
331  
171237

♀ red crossbill (bird 435 on tape) wt. 29.2 gm.

Ovary 3.2 x 3.1. No ent. ova. No fat.

skint  
part. skel.  
332  
171238

♀ red crossbill (bird 442 on tape) wt. 31.9 gm.

Ovary w/ four collapsed follicles; edematous brood patch. Mod. fat.

skint  
part. skel.  
333  
171239

♀ red crossbill (bird 434 on tape) wt. 26.0 gm.

Ovary 4.1 x 4.0. No ent. ova. No fat.

skint  
part. skel.  
334  
171240

♂ red crossbill (bird 439 on tape) wt. 31.5 gm.

Testes L 5.9 x 4.7  
R 5.3 x 4.3 . Mod. fat.

skint  
part. skel.  
335  
171241

♂ red crossbill (bird 438 on tape) wt. 24.8 gm.

Testes L 1.8 x 1.5  
R 1.6 x 1.5 . Mod. fat.

skint  
part. skel.  
336  
171242

♀ red crossbill (bird 432 on tape) wt. 29.3 gm.

Ovary 3.3 x 3.0. No ent. ova. Captured July 24, 1986.

skint  
part. skel.  
337  
171243

♂ red crossbill (bird 436 on tape) wt. 26.0 gm.

Testes L 4.2 x 4.1  
R 4.0 x 3.7. Mod. fat. Captured July 24, 1986.

skint  
part. skel.  
338  
171244

♀ red crossbill (bird 433 on tape) wt. 24.4 gm.

Ovary 4.2 x 3.6. No ent. ova. Mod. fat. Captured July 24, 1986.

skint  
part. skel.  
339  
171245

♂ red crossbill (bird 437 on tape) wt. 32.9 gm.

Testes L 5.7 x 4.9  
R 5.0 x 4.5. Little fat. Captured July 24, 1986.

skint  
part. skel.  
340  
171246

♂ red crossbill (bird 446 on tape) wt. 27.5 gm.

Testes L 5.0 x 3.9  
R 4.2 x 3.8. . No fat.



J. Grotl  
1986

Catalog

43.

1/2 mi. S + 1/2 mi. E Sea Lion Point, elev. 650 ft., Lane Co.,  
Oregon July 25 cont'd

skint.  
part. skel.  
341  
171247

♀ red crossbill (bird #43 on tape) wt. 28.3 gm.

Ovary  $4.8 \times 4.4$ , no enl. ova. Little fat.

skint.  
part. skel.  
342  
171248

♂ red crossbill (bird #44 on tape) wt. 31.7 gm.

Testes L  $4.4 \times 4.0$   
R  $4.0 \times 3.6$ . Little fat.

skint.  
part. skel.  
343  
171249

♂ red crossbill (bird #50 on tape) wt. 30.1 gm.

Testes L  $6.5 \times 5.0$   
R  $5.3 \times 4.7$ . No fat.

skint.  
part. skel.  
344  
171250

♀ red crossbill (bird #47 on tape) wt. 29.4 gm.

Ovary  $6.2 \times 5.2$ , oviduct enlarged, one 2mm yolk y ovum, brood patch. No fat.

skint.  
part. skel.  
345  
171251

♀ red crossbill (bird #48 on tape) wt. 29.4 gm.

Ovary  $6.9 \times 6.1$ , oviduct enlarged, largest ovum = 2mm, brood patch. Heavy fat.

skint.  
part. skel.  
346  
171252

♂ red crossbill (bird #49 on tape) wt. 25.4 gm.

Testes L  $4.6 \times 3.7$   
R  $3.9 \times 3.3$ . Moderate fat.

skint.  
part. skel.  
347  
171253

♀ red crossbill (bird #51 on tape) wt. 23.4 gm.

Ovary  $3.9 \times 3.8$ , no enl. ova. Little fat.

skint.  
part. skel.  
348  
171254

♀ red crossbill (bird #45 on tape) wt. 28.7 gm.

Ovary  $7.0 \times 6.7$ , oviduct enlarged, largest ovum = 1.9 mm, brood patch. Little fat.

Sheep Creek, 2mi. N + 1 mi. W Northport,

elev. 1900 ft., Stevens Co., Washington July 29

skint.  
part. skel.  
349  
171213

♀ red crossbill (bird #52 on tape) wt. 32.9 gm.

Ovary  $5.6 \times 4.7$ , no enl. ova. Little fat.

skint.  
part. skel.  
350  
171214

♀ red crossbill (bird #53 on tape) wt. 35.5 gm.

Ovary  $4.2 \times 3.4$ , no enl. ova. Little fat.

skint.  
part. skel.  
351  
171215

♀ red crossbill (bird #60 on tape) wt. 29.9 gm.

Ovary  $4.2 \times 3.3$ , no enl. ova. Little fat.

skint.  
part. skel.  
352  
171216

♂ red crossbill (bird #57 on tape) wt. 29.7 gm.

Testes L  $3.7 \times 3.1$   
R  $3.1 \times 2.7$ . Little fat.





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catalog

44.

Sheep Creek, 2 mi. N + 1 mi. W Northport, elev. 1900 ft.  
Stevens Co., Washington July 30 cont'd

skin +  
part. skel.  
353  
171217

♀ red crossbill (bird 456 on tape) wt. 27.5 gm.  
Ovary 3.6 x 3.1, no enl. ova. No fat.

skin +  
part. skel.  
354  
171218

♀ red crossbill (bird 458 on tape) wt. 31.2 gm.  
Ovary 5.0 x 3.6, largest ovum = 0.8 mm, no brood patch. <sup>little</sup> fat.

skin +  
part. skel.  
355  
171219

♀ red crossbill (bird 455 on tape) wt. 30.4 gm.  
Ovary 4.1 x 3.4, no enl. ova. No fat.

skin +  
part. skel.  
356  
171220

♀ red crossbill (bird 454 on tape) wt. 28.3 gm.  
Ovary 3.5 x 3.0, no enl. ova. No fat.

skin +  
part. skel.  
357  
171221

♂ red crossbill (bird 459 on tape) wt. 33.1 gm.  
Testes L 1.5 x 1.3  
R 1.4 x 1.1. Mod. fat.

skin +  
part. skel.  
358  
171222

♂ red crossbill (bird 462 on tape) wt. 40.2 gm.  
Testes L 4.9 x 4.5  
R 4.5 x 4.3. Mod. fat.

skin +  
part. skel.  
359  
171223

♂ red crossbill (bird 461 on tape) wt. 30.1 gm.  
Testes L 5.1 x 5.0  
R 4.9 x 4.7. No fat.

July 31

skin +  
part. skel.  
360  
171224

♀ red crossbill (bird 465 <sup>not</sup> recorded) wt. 35.2 gm.  
Ovary 6.7 x 4.7, <sup>oviduct sl. enlarged,</sup> largest ovum = 1.3 mm, brood patch. Little fat.

skin +  
part. skel.  
361  
171225

♂ red crossbill (bird 464 on tape) wt. 25.6 gm.  
Testes L 1.3 x 1.2  
R 1.2 x 1.1. No fat.

skin +  
part. skel.  
362  
171226

♀ red crossbill (bird 463 on tape) wt. 35.1 gm.  
Ovary 4.7 x 3.5, no enl. ova. Little fat.

skin +  
part. skel.  
363  
171227

♂ red crossbill (bird 469 on tape) wt. 36.9 gm.  
Testes L 3.9 x 3.4  
R 3.3 x 3.0. Moderate fat.

skin +  
part. skel.  
364  
171228

♂ red crossbill (bird 466 on tape) wt. 34.4 gm.  
Testes L 5.4 x 4.5  
R 4.0 x 3.7. Little fat.

skin +  
part. skel.  
365  
171229

♂ red crossbill (bird 468 on tape) wt. 30.5 gm.  
Testes L 1.1 x 0.9  
R 1.1 x 0.9. No fat.



J. Groth  
1986

Sheep Creek, 2 mi. N + 1 mi. W Northport, elev.  
1900 ft., Stevens Co., Washington July 31 cont'd

skint  
part. skel.  
366  
171230

♂ red crossbill (bird 467 on tape) wt. 31.0 gm.  
Testes L 2.4 x 2.2  
R 1.9 x 1.5. Little fat.

North Snow Peak, 12 mi. S + 3 mi. W Clark Fork,  
elev. 4000 ft., Shoshone Co., Idaho August 2

skint  
part. skel.  
367  
171163

♂ red crossbill (bird 470 on tape) wt. 36.0 gm.  
Testes L 3.1 x 2.8  
R 2.8 x 2.8. Moderate fat.

Cherry Creek, 4 mi. W Easley Peak, elev.  
7400 ft., Blaine Co., Idaho August 4

skint  
part. skel.  
368  
171164

♂ red crossbill (bird 471 on tape) wt. 34.3 gm.  
Testes L 1.0 x 0.8  
R 1.0 x 0.8. Little fat.

skint  
part. skel.  
369  
171165

♂ red crossbill (bird 472 on tape) wt. 34.4 gm.  
Testes L 0.9 x 0.8  
R 0.9 x 0.8. Moderate fat.

skint  
part. skel.  
370  
171166

♀ red crossbill (bird 478 on tape) wt. 36.8 gm.  
Ovary 4.7 x 4.2, no ent. ova. Little fat.

skel. only.  
371  
171282

♂ evening grosbeak extensive wing and  
body molt wt. 60.5 gm.  
wing = 110.5 mm, Testes L 2.8 x 2.3  
R 1.9 x 1.6.

skint  
part. skel.  
372  
171167

♀ red crossbill (bird 476 on tape) wt. 32.6 gm.  
Ovary 4.0 x 3.3 mm, no ent. ova. No fat.

skint  
part. skel.  
373  
171168

♂ red crossbill (bird 479 on tape) wt. 35.0 gm.  
Testes L 1.3 x 1.0  
R 1.3 x 1.0. Moderate fat.

skint  
part. skel.  
374  
171169

♀ red crossbill (bird 473 on tape) wt. 31.3 gm.  
Ovary 3.7 x 3.5, no ent. ova. No fat.

skint  
part. skel.  
375  
171170

♂ red crossbill (bird 474 on tape) wt. 31.9 gm.  
Testes L 1.0  
R 0.9. No fat.



J. Groth  
1986Cherry Creek, 4 mi. W Easley Peak, elev. 7400 ft.,  
Blaine Co., Idaho      August 4 cont'd

- skin +  
part. skel. 376 ♀ red crossbill (bird 475 on tape) wt. 33.3 gm.  
171171  
Ovary  $3.2 \times 3.2$ , no enl. ova. Little fat.
- skin +  
part. skel. 377 ♂ red crossbill (bird 477 on tape) wt. 35.4 gm.  
171172  
Testes L 0.9  
R 0.9. Little fat.

Aug 5

- skin +  
part. skel. 378 ♀ red crossbill (bird 480 on tape) wt. 35.1 gm.  
171173  
Ovary  $4.2 \times 4.2$  mm, no enl. ova. Little fat.
- skin +  
part. skel. 379 ♂ red crossbill (bird 482 on tape) wt. 37.6 gm.  
171174  
Testes L  $1.1 \times 1.0$   
R  $1.0 \times 0.9$ , Moderate fat.
- skin +  
part. skel. 380 ♂ red crossbill (bird 485 on tape) wt. 33.1 gm.  
171175  
Testes L  $1.0 \times 0.9$   
R  $1.0 \times 0.9$ , Little fat.
- skin +  
part. skel. 381 ♀ red crossbill (bird 484 on tape) wt. 33.8 gm.  
171176  
Ovary  $4.2 \times 3.2$ , no enl. ova. Little fat.
- skin +  
part. skel. 382 ♀ red crossbill (bird 481 on tape) wt. 33.4 gm.  
171177  
Ovary  $4.5 \times 3.8$ , no enl. ova. Moderate fat.
- skin +  
part. skel. 383 ♀ red crossbill (bird 486 on tape) wt. 34.6 gm.  
171178  
Ovary  $4.5 \times 3.7$ , no enl. ova. Little fat.
- skin +  
part. skel. 384 ♂ red crossbill (bird 483 on tape) wt. 36.8 gm.  
171179  
Testes L  $1.2 \times 1.1$   
R  $1.1 \times 1.0$ . Little fat.

Aug 6

- skin +  
part. skel. 385 ♀ red crossbill (bird 487 on tape) wt. 34.4 gm.  
171180  
Ovary  $4.2 \times 3.7$ , no enl. ova. Little fat.
- skin +  
part. skel. 386 ♂ red crossbill (bird 492 on tape) wt. 35.3 gm.  
171181  
Testes L  $1.1 \times 0.9$   
R  $1.0 \times 0.9$ . No fat.
- skin +  
part. skel. 387 ♀ red crossbill (bird 489 on tape) wt. 42.1 gm.  
171182  
Ovary  $4.1 \times 4.0$ , no enl. ova. Heavy fat.



J. Groth  
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47.

Cherry Creek, 4 mi. W Easley Peak, elev. 7400 ft.,  
Blaine Co., Idaho Aug 6 cont'd

skint  
part. skel.  
388  
171183

♀ red crossbill (bird 490 on tape) wt. 32.4 gm.  
Ovary 4.0 x 3.9, no enl. ova. Little fat.

skint  
part. skel.  
389  
171184

♂ red crossbill (bird 493 on tape) wt. 34.8 gm.  
Testes L 1.4 x 1.2  
R 1.1 x 1.0. Little fat.

skint  
part. skel.  
390  
171185

♂ red crossbill (bird 491 on tape) wt. 34.2 gm.  
Testes L 1.0  
R 1.0. Moderate fat.

skint  
part. skel.  
391  
171186

♂ red crossbill (bird 488 on tape) wt. 36.7 gm.  
Testes L 3.0 x 2.8  
R 2.5 x 2.5. Moderate fat.

skint  
part. skel.  
392  
171187

♀ red crossbill (bird 494 on tape) wt. 31.2 gm.  
Ovary 5.5 x 5.0, ova somewhat enlarged,  
largest ovum = 1.0 mm, Little fat.

3 mi. S + 6 1/2 mi. E Mount Thielsen, elev. 4800 ft.,

Klamath Co., Oregon August 11

skint  
part. skel.  
393  
171267

♂ red crossbill (bird 495 on tape) wt. 33.9 gm.  
Testes L 1.5 x 1.2  
R 1.5 x 1.2. Little fat.

skint  
part. skel.  
394  
171268

♂ red crossbill (bird 496 on tape) wt. 29.1 gm.  
Testes L 3.2 x 2.8  
R 3.0 x 2.6. No fat.

3 mi. S + 8 1/2 mi. E Mount Thielsen, elev. 4700 ft.,

Klamath Co., Oregon August 11 cont'd

skel. only  
395  
171160

imm ♀ black-backed woodpecker wt. 63.4 gm.  
Moderate fat. Ovary 3 x 4 mm. Molting outer two primaries.

skint  
part. skel.  
396  
171269

♂ red crossbill (bird 498 on tape) wt. 28.4 gm.  
Testes L 1.2 x 1.1  
R 1.1 x 1.1. Little fat.





J. Groth  
1986

catalog

48.

2 mi. S + 3 mi. E Mount Thielsen, elev. 6100 ft.,  
Klamath Co., Oregon August 12

skint  
part. skel. 397 ♂ red crossbill (bird 503 on tape) wt. 31.9 gm.  
171264  
Testes L  $4.2 \times 3.8$   
R  $4.0 \times 3.8$ . No fat.

skint  
part. skel. 398 ♂ red crossbill (bird 501 on tape) wt. 30.6 gm.  
171265  
Testes L  $1.1 \times 0.9$   
R  $1.1 \times 0.9$ . Little fat.

1 mi. S + 7 mi. E Mount Thielsen, elev. 4800 ft.,  
Klamath Co., Oregon Aug 12 cont'd

skint  
part. skel. 399 ♂ red crossbill (bird 504 on tape) wt. 30.8 gm.  
171255  
Testes L  $1.0 \times 0.9$   
R  $1.0 \times 0.9$ . Heavy fat.

2 mi. S + 3 mi. E Mount Thielsen, elev. 6100 ft.,  
Klamath Co., Oregon Aug. 12 cont'd

skint  
part. skel. 400 ♂ red crossbill (bird 499 on tape) wt. 31.1 gm.  
171262  
Testes L  $1.7 \times 1.5$   
R  $1.7 \times 1.5$ . Little fat. Captured Aug. 11, 1986.

3 mi. S + 8 1/2 mi. E Mount Thielsen, elev. 4700 ft.,  
Klamath Co., Oregon Aug 12 cont'd

skint  
part. skel. 401 ♀ red crossbill (bird 497 on tape) wt. 26.9 gm.  
171270  
Ovary  $5.5 \times 4.5$ , largest ovum  $\approx 1.0$  mm. No fat. Captured  
August 11, 1986.

2 mi. S + 3 mi. E Mount Thielsen, elev. 6100 ft.,  
Klamath Co., Oregon Aug. 12 cont'd

skint  
part. skel. 402 ♂ red crossbill (bird 500 on tape) wt. 31.7 gm.  
171263  
Testes L  $0.9 \times 0.8$   
R  $0.9 \times 0.8$ . Little fat. Captured August 11, 1986.

skint  
part. skel. 403 ♂ red crossbill (bird 502 on tape) wt. 37.0 gm.  
171266  
Testes L  $3.2 \times 2.6$   
R  $2.9 \times 2.6$ . Little fat.



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J. Groth  
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1 mi. S + 7 mi. E Mount Thielsen, elev. 4800 ft.,  
Klamath Co., Oregon August 12 cont'd

skint  
part. skel.  
404  
171256

♀ red crossbill (bird 505 on tape) wt. 39.7 gm.  
Ovary 6.1 x 4.3, <sup>old brood patch</sup> largest ovum = 1.2 mm. Little fat. Feeding flying young.

August 13

skint  
part. skel.  
405  
171257

♂ red crossbill (bird 506 on tape) wt. 34.5 gm.  
Testes L 3.6 x 3.3, R 3.4 x 3.4. Little fat.

skint  
part. skel.  
406  
171258

♀ red crossbill (bird 507 on tape) wt. 32.0 gm.  
Ovary 5.3 x 4.1, <sup>oviduct sl. ent.</sup> ova sl. ent., old brood patch. Little fat.

skint  
part. skel.  
407  
171259

♀ red crossbill (bird 508 on tape) wt. 29.6 gm.  
Ovary 3.2 x 2.3, no ent. ova. No fat.

skint  
part. skel.  
408  
171260

♀ red crossbill (bird 509 on tape) wt. 26.3 gm.  
Ovary 5.3 x 3.5, no ent. ova. No fat.

skint  
part. skel.  
409  
171261

♀ red crossbill (bird 510 on tape) wt. 32.1 gm.  
Ovary 4.2 x 3.1, no ent. ova. Little fat.

Univ. Calif. Berkeley Animal Behavior Station

skint  
part. skel.  
410  
171162

♂ red crossbill (bird "40" on tape) wt. <sup>at capture.</sup> ~~24.7~~ 34.0 gm

Captured 24 February 1983 on Brush Mountain,  
elev. 2600 ft., 2 mi. NW Blacksburg, Montgomery  
Co., Virginia. Found dead in captivity on  
December 20, 1986. No tissues taken.

1986  
1987

April 22, 1987

Anat. 4925

Anat. 4926

Anat. 4927

411 } Captive-raised baby crossbills. From original clutch  
412 } of 4 eggs by ♀ "33" (on tape) and "59" (on tape).  
413 } No weights or measurements taken. All  
died of starvation.



J. Groth  
1987

Catalog

50.

Barfoot Park, elev. 8200 ft., Chiricahua Mts.,  
Cochise Co., Ariz. May 21

skel. only  
414  
171437

♂ pine siskin Testes L 3.5 mm  
R 3.5 mm wt 12.1 gm.

skel. + tissues. Crop contr. = 26 large pine seeds.

May 22

skin +  
part. skel.  
415  
171400

♀ red crossbill ("bird 521" on tape) wt. 32.9 gm.

Ovary 4.5 x 2.6 mm; no enl. fol.; moderate fat;

skin +  
part. skel.  
416  
171401

♀ red crossbill ("bird 520" on tape) wt. 29.9 gm.

ovary 4.0 x 2.8 mm; no enl. fol.; little fat;

skin +  
part. skel.  
417  
171402

♂ red crossbill ("bird 516" on tape) wt. 33.7 gm.

Testes L 1.7 x 1.4 mm  
R 1.7 x 1.4 mm; Little fat; body molt.

skin +  
part. skel.  
418  
171403

♂ red crossbill ("bird 514" on tape) wt 30.8 gm.

Testes L 2.2 x 1.9 mm  
R 1.9 x 1.7 mm; Little fat; body molt

skin +  
part. skel.  
419  
171404

♂ red crossbill ("bird 522" on tape) wt. 37.2 gm.

Testes L 2.0 x 1.8 mm  
R 1.7 x 1.7 mm; Little fat; body molt

skin +  
part. skel.  
420  
171405

♂ red crossbill ("bird 519" on tape) wt. 32.2 gm.

Testes L 3.2 x 3.0 mm  
R 2.6 x 2.2 mm; Little fat; no molt

skin +  
part. skel.  
421  
171406

♀ red crossbill ("bird 518" on tape) wt. 32.1 gm.

ovary 4.1 x 2.7 mm; no enl. fol.; Little fat

skin +  
part. skel.  
422  
171407

♂ red crossbill ("bird 515" on tape) wt. 34.0 gm.

Testes L 1.8 x 1.7 mm  
R 1.6 x 1.6 mm; Little fat; molting

skin +  
part. skel.  
423  
171408

♀ red crossbill ("bird 517" on tape) wt. 31.2 gm.

Ovary 5.1 x 3.6 mm; no enl. fol.; No fat; molting

May 23

skel. only  
424  
171203

♀ hepatic tanager (skel + tissues) wt. 38.1 gm.

Recorded in calls on tape JG 75 B. Ovary enl.,

9.5 x 7.5 mm, largest fol. = 2.5 mm; Little fat; <sup>no</sup> molt



J. Groth  
1987

catalog

51.

Barfoot Park, elev. 8200 ft., Chiricahua Mts.,  
Cochise Co., Ariz May 24

skin+part.  
part.skel. 425  
171409

♀ red crossbill ("bird 523" on tape) wt. 30.9 gm.

Ovary  $4.7 \times 2.5$  mm; no enl. fol.; Little fat; molting  
(captured May 23)

skin+  
part.skel. 426  
171410

♂ red crossbill ("bird 524" on tape) wt. 34.1 gm.

testes L  $2.1 \times 2.0$  mm  
R  $1.9 \times 1.9$  mm; Little fat; molting;  
(captured May 23)

1 1/2 mi. W Hawk Peak, elev. 9700 ft.,

Pinaleno Mts., Graham Co., Ariz., May 25

skin+  
part.skel. 427  
171387

♀ red crossbill ("bird 526" on tape) wt. 31.2 gm.

Ovary  $4.6 \times 2.9$  mm; Little fat; No molt

skin+  
part.skel. 428  
171388

♂ red crossbill ("bird 529" on tape) wt 36.9 gm.

Testes L  $3.2 \times 2.7$  mm  
R  $3.0 \times 2.6$  mm; Little fat; molting

skin+  
part.skel. 429  
171389

♂ red crossbill ("bird 535" on tape) wt. 33.8 gm.

Testes L  $1.1 \times 1.0$  mm  
R  $1.1 \times 1.0$  mm; Little fat; molting

skin+  
part.skel. 430  
171390

♂ red crossbill ("bird 527" on tape) wt. 35.2 gm.

Testes L  $3.7 \times 3.4$  mm  
R  $3.4 \times 3.2$  mm; Moderate fat; molting

skin+  
part.skel. 431  
171391

♀ red crossbill ("bird 528" on tape) wt. 30.5 gm.

Ovary  $4.6 \times 3.4$  mm; No fat; No molt

skin+  
part.skel. 432  
171392

♂ red crossbill ("bird 525" on tape) wt. 31.7 gm.

Testes L  $2.3 \times 2.1$  mm  
R  $2.1 \times 1.8$  mm; Little fat; molting

skin+  
part.skel. 433  
171393

♀ red crossbill ("bird 532" on tape) wt. 31.5 gm.

Ovary  $4.7 \times 3.6$  mm; Little fat, molting

skin+  
part.skel. 434  
171394

♀ red crossbill ("bird 534" on tape) wt. 29.7 gm.

Ovary  $5.0 \times 3.5$  mm; Little fat, molting

skin+  
part.skel. 435  
171395

♀ red crossbill ("bird 531" on tape) wt. 32.6 gm.

Ovary  $4.7 \times 3.8$  mm; Little fat; no molt





1 1/2 mi. W Hawk Peak, elev. 9700 ft., Pinaleno  
Mts., Graham Co., Ariz. May 25 (cont'd)

skin +  
part. skel.  
436  
171396

♂ red crossbill ("bird 530" on tape) wt. 33.0 gm.

Testes L 1.7 x 1.3 mm  
R 1.4 x 1.2 mm; Little fat; No molt

skin +  
part. skel.  
437  
171397

♀ red crossbill ("bird 533" on tape) wt. 31.0 gm.

Ovary 5.2 x 3.7 mm; Little fat; molting

Barfoot Park, elev. 8200 ft., Chiricahua Mts.,  
Cochise Co., Ariz. May 26

skin +  
part. skel.  
438  
171411

♀ red crossbill ("bird 536" on tape) wt. 33.6 gm.

Ovary sl. enl., 5.3 x 4.1 mm, largest fol. = 1.1 mm;

Brood patch; Moderate fat.

skin +  
part. skel.  
439  
171412

♂ red crossbill ("bird 537" on tape) wt. 34.1 gm.

Testes L 2.9 x 2.5 mm  
R 2.5 x 2.4 mm; Little fat; molting

May 27

skin +  
part. skel.  
440  
171413

♂ red crossbill ("bird 539" on tape) wt. 34.9 gm.

Testes L 2.9 x 2.6 mm  
R 2.6 x 2.6 mm; Moderate fat; molting

skin +  
part. skel.  
441  
171414

♀ red crossbill ("bird 538" on tape) wt. 31.9 gm.

Ovary 4.3 x 3.6 mm; Little fat; molting

skin +  
part. skel.  
442  
171415

♀ red crossbill ("bird 540" on tape) wt. 32.2 gm.

Ovary 4.6 x 3.5 mm; Moderate fat; molting

May 28

skin +  
part. skel.  
443  
171416

♀ red crossbill ("bird 541" on tape) wt. 32.4 gm.

Ovary 4.8 x 3.3 mm; Little fat; molting

skin +  
part. skel.  
444  
171417

♂ red crossbill ("bird 542" on tape) wt. 32.6 gm.

Testes L 1.8 x 1.6 mm  
R 1.6 x 1.5 mm; No fat; molting



J. Groth  
1987

catalog

53.

1 mi. S + 1/2 mi. E Summerhaven, elev. 8000 ft.,  
Santa Catalina Mts., Pima Co., Ariz. May 30

skin +  
part. skel.  
445  
171398

♀ red crossbill ("bird 543" on tape) wt. 32.2 gm.

Ovary 4.2 x 3.5 mm; Moderate fat; No molt

skin +  
part. skel.  
446  
171399

♀ red crossbill ("bird 544" on tape) wt. 34.6 gm.

Ovary 5.3 x 4.0 mm; Moderate fat; No molt

Black Canyon, 2 1/2 mi. N + 3 mi. E Santa Rita,  
elev. 7500 ft., Black Mts., Grant Co., New Mexico

May 31

skin +  
part. skel.  
447  
171420

♂ red crossbill ("bird 546" on tape) wt. 33.8 gm.

Testes L 1.9 x 1.8 mm  
R 1.8 x 1.8 mm; Moderate fat; molting

skin +  
part. skel.  
448  
171421

♂ red crossbill ("bird 547" on tape) wt. 30.2 gm.

Testes L 2.8 x 2.4 mm  
R 2.4 x 2.4 mm; Little fat; molting

skin +  
part. skel.  
449  
171422

♀ red crossbill ("bird 545" on tape) wt. 27.3 gm.

Ovary 4.9 x 3.4 mm; No fat; molting

Poverty Creek, 8 1/2 mi. N + 10 mi. W Chloride,  
elev. 7700 ft., Black Mts., Sierra Co., New Mex.

June 1

skin +  
part. skel.  
450  
171423

♀ red crossbill ("bird 552" on tape) wt. 40.9 gm.

Ovary 4.2 x 4.0 mm; Heavy fat;

skin +  
part. skel.  
451  
171424

♀ red crossbill ("bird 553" on tape) wt. 35.0 gm.

Ovary 5.3 x 4.2 mm; Moderate fat;

skin +  
part. skel.  
452  
171425

♂ red crossbill ("bird 554" on tape) wt. 36.8 gm.

Testes L - not found (shot);  
R 3.2 x 3.2 mm; Moderate fat; molting

skin +  
part. skel.  
453  
171426

♀ red crossbill ("bird 555" on tape) wt. 36.9 gm.

Ovary 5.9 x 4.2 mm; Heavy fat; No molt

skin +  
part. skel.  
454  
171427

♂ red crossbill ("bird 549" on tape) wt. 31.2 gm.

Testes L 3.7 x 3.7 mm  
R 4.0 x 3.4 mm; Little fat; molting



J. Groth  
1987

catalog

54.

Poverty Creek, 8 1/2 mi. N + 10 mi. W Chloride,  
elev. 7700 ft., Black Mts., Sierra Co., New Mex.

June 1 (cont'd)

skin +  
part. skel.  
455  
171428

♂ red crossbill ("bird 550" on tape) wt. 33.4 gm.

Testes L 2.1 x 2.0 mm  
R 2.0 x 2.0 mm; Little fat; molting

skin +  
part. skel.  
456  
171429

♂ red crossbill ("bird 551" on tape) wt. 37.0 gm.

Testes L 3.2 x 3.0 mm  
R 3.0 x 2.9 mm; Moderate fat; molting

skin +  
part. skel.  
457  
171430

♂ red crossbill ("bird 548" on tape) wt. 34.6 gm.

Testes L 3.7 x 3.3 mm  
R 3.4 x 3.3 mm; Little fat; molting

Base of Vick's Peak, 11 1/2 mi. N + 2 mi. E Monticello,  
elev. 8000 ft., San Mateo Mts., Socorro Co., New Mex.

June 2

skin +  
part. skel.  
458  
171418

♂ red crossbill ("bird 556" on tape) wt. 38.0 gm.

Testes L 3.0 x 2.4 mm  
R 2.8 x 2.7 mm; Moderate fat; No molt

June 3

skin +  
part. skel.  
459  
171419

♀ red crossbill ("bird 557" on tape) wt. 35.3 gm.

Ovary 4.1 x 3.6 mm; Little fat; No molt

Spring Creek Pass, elev. 11,100 ft., San Juan  
Mts., Hinsdale Co., Colorado June 4

skin +  
part. skel.  
460  
171305

♂ red crossbill ("bird 558" on tape) wt. 27.0 gm.

Testes L 1.4 mm  
R 1.3 mm; Little fat;

skin +  
part. skel.  
461  
171306

♀ red crossbill ("bird 560" on tape) wt. 26.0 gm.

Ovary 4.2 x 3.1 mm; Little fat; No molt

skin +  
part. skel.  
462  
171307

♂ red crossbill ("bird 559" on tape) wt. 29.9 gm.

Testes L 2.7 x 2.4 mm  
R 2.4 x 2.3 mm; Little fat; No molt

skin +  
part. skel.  
463  
171308

♂ red crossbill ("bird 561" on tape) wt. 33.6 gm.

Testes L 5.4 x 4.7 mm  
R 5.1 x 4.2 mm; Little fat; No molt

skin +  
part. skel.  
464  
171309

♀ red crossbill ("bird 562" on tape) wt. 24.6 gm.

Ovary 5.0 x 4.0 mm, sl. follicular - largest = 0.9 mm; Little fat; No molt



J. Groth  
1987

catalog

55.

Spring Creek Pass, elev. 11,100 ft., San Juan Mts.,  
Hinsdale Co., Colorado June 4 (cont'd)

skin +  
part. skel.  
465  
171310

♀ red crossbill ("bird 563" on tape) wt. 30.6 gm.

Ovary 5.1 x 4.2 mm, largest fol. = 1.0 mm; Little fat; molting

skin +  
part. skel.  
466  
171311

♀ red crossbill ("bird 564" on tape) wt. 24.8 gm.

Ovary 4.0 x 3.6 mm; No fat; molting

June 5

skin +  
part. skel.  
467  
171312

♂ red crossbill ("bird 565" on tape) wt. 30.7 gm.

Testes L 1.7 x 1.5 mm  
R 1.5 x 1.5 mm; Moderate fat; No molt

June 6

skin +  
part. skel.  
468  
171313

♀ red crossbill ("bird 566" on tape) wt. 31.8 gm.

ovary 4.1 x 3.0 mm; Little fat; molting

skin +  
part. skel.  
469  
171432

♀ white-winged crossbill wt. 23.1 gm.

ovary 6.3 x 4.0 mm; largest fol. = 1.5 mm; oviduct sl. enl.;  
Little fat; No molt

skel. only  
470  
171284

♂ pine grosbeak (skel. + tissues) wt. 53.8 gm.

Testes L 9 x 6.5 mm; cl. protrub.; wing chord = 113.6 mm;  
No fat; no molt

June 7

skin +  
part. skel.  
471  
171314

♂ red crossbill ("bird 568" on tape) wt. 29.5 gm.

Testes L 2.1 x 2.0 mm  
R 1.9 x 1.9 mm; Little fat; no molt

skel. only  
472  
171285

♀ pine grosbeak (skel + tissues) wt. 65.9 gm.

Brood patch, ovary enl., largest fol. = 2.5 mm;

Little fat; no molt; wing chord = 122.8 mm

skin +  
part. skel.  
473  
171433

♂ white-winged crossbill wt. 25.2 gm.

Testes L 7.1 x 4.9 mm  
R 6.6 x 6.2 mm; Little fat; no molt

skin +  
part. skel.  
474  
171434

♀ (juv.) white-winged crossbill wt. 17.8 gm.

Ovary 2.5 x 2.0 mm.; recorded in begging calls on  
tape; probably daughter of JGG 473; No fat.





J. Groth  
1987

catalog

56.

Spring Creek Pass, elev. 11,100 ft., San Juan Mts.,  
Hinsdale Co., Colorado June 7 (cont'd)

skin +  
part. skel.

475  
171315

♀ red crossbill ("bird 567" on tape) wt. 29.0 gm.

Ovary  $4.3 \times 3.6$  mm; Little fat; no molt, refeathering brood patch

June 8

skin +  
part. skel.

476  
171316

♀ red crossbill ("bird 570" on tape) wt. 32.5 gm.

Ovary  $5.8 \times 4.0$  mm; largest fol. = 1.0 mm; Little fat; molting

skin +  
part. skel.

477  
171317

♂ red crossbill ("bird 573" on tape) wt. 31.4 gm.

Testes L  $3.6 \times 3.1$  mm  
R  $3.5 \times 3.4$  mm; Moderate fat; no molt

skin +  
part. skel.

478  
171318

♀ red crossbill ("bird 571" on tape) wt. 38.1 gm.

Ovary  $6.3 \times 4.3$  mm, 3 collapsed follicles, largest  
fol. = 1.8 mm; oviduct greatly enl; thickly edematous  
brood patch; Heavy fat; No molt

skin +  
part. skel.

479  
171319

♂ red crossbill ("bird 572" on tape) wt. 34.1 gm.

Testes L  $2.8 \times 2.3$  mm.  
R  $2.4 \times 2.4$  mm; Moderate fat; No molt

June 9

skin +  
part. skel.

480  
171321

♂ (juv) red crossbill ("bird 574" on tape)<sup>2</sup> wt. 33.8 gm.

Testes L 1.1 mm  
R 0.9 mm; Moderate fat; No molt

skin +  
part. skel.

481  
171322

♀ red crossbill ("bird 575" on tape)<sup>2</sup> wt. 38.0 gm.

Ovary  $4.8 \times 3.1$  mm; Heavy fat; No molt

skin +  
part. skel.

482  
171323

♀ red crossbill ("bird 576" on tape)<sup>4</sup> wt. 31.4 gm.

ovary  $4.8 \times 3.2$  mm (sl. enl.), largest fol. = 1.2 mm;

Heavy fat; molting + refeathering b. patch.

skin +  
part. skel.

483

♂ red crossbill ("bird 569" on tape) wt. 30.9 gm.

Testes L  $4.6 \times 4.1$  mm  
R  $3.8 \times 3.7$  mm; No fat; no molt (captured June 8)

skin +  
part. skel.

484  
171324

♂ (juv) red crossbill ("bird 577" on tape)<sup>5</sup> wt. 30.4 gm.

Testes L  $1.5 \times 1.2$  mm  
R  $1.4 \times 1.1$  mm; Little fat;

skin +  
part. skel.

485  
171325

♀ red crossbill ("bird 578" on tape)<sup>5</sup> wt. 30.3 gm.

Ovary  $4.7 \times 3.2$  mm; Moderate fat; No molt



J. Groth  
1987

Catalog

57.

Spring Creek Pass, elev. 11,100 ft., San Juan Mts.,  
Hinsdale Co., Colorado June 9 (cont'd)

skin +  
part. skel.  
486  
171326

♀ red crossbill ("bird 579" on tape) wt. 28.9 gm.  
Ovary  $4.7 \times 3.3$  mm; Little fat; molting

Sagehen Creek Field Station, 3 mi. NW Hobart  
Mills, elev. 6400 ft., Nevada Co., Calif. June 11

skin +  
part. skel.  
487  
171384

♂ red crossbill ("bird 580" on tape) wt. 32.0 gm.  
Testes L  $2.0 \times 1.8$  mm  
R  $1.6 \times 1.6$  mm; Little fat; No molt

skin +  
part. skel.  
488  
171385

♀ red crossbill ("bird 581" on tape) wt. 31.3 gm.  
Ovary  $5.2 \times 4.0$ , largest fol = 1.1 mm; Moderate fat; <sup>No</sup> molt

skin +  
part. skel.  
489  
171386

♂ red crossbill ("bird 582" on tape) wt. 34.4 gm.  
Testes L  $2.1 \times 2.0$  mm  
R  $1.7 \times 1.7$  mm; Little fat; wing molt

Animal Behavior Station, University of California,  
Berkeley, Calif. June 22

Anat. 4928  
490

Anat. 4929  
491

Anat. 4930  
492

Anat. 4931  
493

Fluid-preserved specimens of baby red crossbills  
born in captivity. Eggs probably hatched June 20.  
Birds found dead on floor, out of the nest.  
Born to birds "33" and "59". No wts. taken.

6 mi. E Grand Marais, elev. 650 ft.,  
Luce Co., Michigan July 14

skin +  
part. skel.  
494  
171286

♂ red crossbill ("bird 583" on tape) wt. 30.7 gm.  
Testes L  $4.5 \times 4.0$   
R  $4.2 \times 4.0$ ; Heavy fat; no molt; crop empty

skin +  
part. skel.  
495  
171287

♀ red crossbill ("bird 584" on tape) wt. 27.5 gm.  
Ovary sl. dev.  $5.3 \times 4.0$  mm, largest fol. = 1.3 mm;  
heavy fat, no molt

skin +  
part. skel.  
496  
171288

♂ red crossbill ("bird 585" on tape) wt. 28.4 gm.  
Testes L  $4.2 \times 3.5$   
R  $4.3 \times 3.9$ ; Heavy fat; no molt

skin +  
part. skel.  
497  
171289

juv ♀ red crossbill ("bird 588" on tape) wt. 32.7 gm  
ovary  $4.3 \times 3.3$  mm, no ent. fol.; moderate fat; no molt



J. Groth  
19876 mi. E Grand Marais, elev. 650 ft, Luce Co.,  
Michigan  
July 15skin +  
part. skel.

498

171292

♀ red crossbill ("bird 594" on tape) wt. 37.9 gm.

ovary enl.  $6 \times 3 \times 4.5$  mm; 4 follicles 1.9 mm ea.; old brood patch moderate fat; no moltskin +  
part. skel.

499

171290

juv. ♀ red crossbill ("bird 587" on tape) wt. 32.7 gm.

captured July 14; ovary  $4.2 \times 3.2$ ; moderate fat; no moltskin +  
part. skel.

500

171291

♂ red crossbill ("bird 586" on tape) wt. 27.8 gm

captured July 14; Testes  $5.1 \times 4.1$   $4.5 \times 4.2$ ; mod. fat; no moltskin +  
part. skel.

501

171293

♂ red crossbill ("bird 593" on tape) wt. 33.1 gm.

testes  $5.0 \times 4.5$   $4.8 \times 4.7$ ; little fat; no moltskin +  
part. skel.

502

171294

♂ red crossbill ("bird 589" on tape) wt. 32.7 gm

testes  $5.9 \times 4.7$   $5.1 \times 4.4$ ; little fat; no moltskin +  
part. skel.

503

171295

juv ♂ red crossbill ("bird 590" on tape) wt. 30.5 gm.

testes  $1.2 \times 1.2$   $1.2 \times 1.2$ ; no fatskin +  
part. skel.

504

171296

juv ♂ red crossbill ("bird 592" on tape) wt. 33.3 gm.

testes  $4.2 \times 4.1$   $3.8 \times 3.7$ ; little fat; no moltskin +  
part. skel.

505

171297

juv ♂ red crossbill ("bird 596" on tape) wt. 33.6 gm

testes  $2.2 \times 1.7$   $1.8 \times 1.6$ ; little fat; no moltskin +  
part. skel.

506

171298

juv ♀ red crossbill ("bird 591 on tape) wt. 29.9 gm.

ovary  $4.2 \times 3.3$ ; little fat; no moltskin +  
part. skel.

507

171299

ad ♀ red crossbill ("bird 595" on tape) wt. 29.3 gm.

ovary sl. enl.  $6.5 \times 5.1$  mm; largest fol. = 2.3 mm; bare belly; little fat; no molt

July 16

skin +  
part. skel.

508

171300

juv. ♀ red crossbill ("bird 597" on tape) wt. 28.8 gm.

ovary  $4.0 \times 3.0$ ; under.; little fat;skin +  
part. skel.

509

171301

♂ red crossbill ("bird 598" on tape) wt. 42.2 gm.

Testes  $4.6 \times 4.0$   $4.1 \times 4.1$ ; Heavy fat; no moltskin +  
part. skel.

510

171302

juv ♀ red crossbill ("bird 600" on tape) wt. 33.1 gm.

ovary  $4.3 \times 3.3$ ; under.; Moderate fat



J. Groth  
1987

catalog

59.

6 mi. E. Grand Marais, elev. 650 ft., Luce Co., Michigan  
July 16 (cont'd)

skin +  
part. skel.  
511  
171303

♂ red crossbill ("bird 599" on tape) wt. 40.4 gm.

Testes  $L 4.0 \times 3.3$   
 $R 3.2 \times 2.9$ ; Heavy fat; No molt

skin +  
part. skel.  
512  
171304

♂ red crossbill ("bird 601" on tape) wt. 31.7 gm.

Testes  $L 4.5 \times 4.3$   
 $R 4.0 \times 4.0$ ; Little fat; No molt <sup>shot on Jul. 15,</sup>  
fell out of tree today

Connevy Pond, 1 mi. N + 3 mi. E Lake Placid, elev.

1700 ft., Essex Co., New York  
July 19

skin +  
part. skel.  
513  
171431

♂ white-winged crossbill wt. 28.4 gm.

testes  $L 8.7 \times 7.7$   
 $R 7.7 \times 7.2$ ; no fat; no molt; recorded in song +  
calls on JG 81A

Willow River, 2 mi. S + 16 mi. E Prince George, elev.

2500 ft., British Columbia, Canada  
August 1

skin +  
part. skel.  
514  
171327

juv ♀ red crossbill ("bird 602" on tape) wt. 29.4 gm.

ovary  $3.0 \times 2.6$  mm, undevel.; little fat

Bowron River, 21 mi. W + 3 mi. S Penny, elev. 2800 ft.,

British Columbia  
August 3

skin +  
part. skel.  
515  
171328

juv ♀ red crossbill ("bird 608" on tape) wt. 24.2 gm.

ovary  $3.6 \times 2.8$  mm, undevel.; little fat

skin +  
part. skel.  
516  
171329

juv ♂ red crossbill ("bird 607" on tape) wt. 28.9 gm.

testes  $L 1.8 \times 1.6$   
 $R 1.4 \times 1.3$ ; moderate fat

skin +  
part. skel.  
517  
171330

juv ♀ red crossbill ("bird 604" on tape) wt. 22.0 gm.

ovary  $3.7 \times 3.2$  mm, undevel.; little fat

skin +  
part. skel.  
518  
171331

juv ♂ red crossbill ("bird 603" on tape) wt. 25.8 gm.

testes  $L 1.5 \times 1.2$   
 $R 1.5 \times 1.4$ ; little fat

skin +  
part. skel.  
519  
171332

juv ♂ red crossbill ("bird 605" on tape) wt. 26.5 gm.

testes  $L 1.2$  mm  
 $R 1.0$  mm; moderate fat

skin +  
part. skel.  
520  
171333

juv ♂ red crossbill ("bird 606" on tape) wt. 31.1 gm.

testes  $L 1.3$  mm  
 $R 1.3$  mm; moderate fat



2

3

4

5

J. Groth  
1987Bowron River, 21 mi. W + 3 mi. S Penny, elev. 2800  
ft., British Columbia August 3 (cont'd)skin +  
part. skel.  
521  
171334juv ♀ red crossbill ("bird 609" on tape) wt. 26.7 gm.  
ovary  $3.9 \times 3.4$  mm; little fatThompson Plateau, 7 mi. E + 2 mi. S Clinton, elev. 2900  
ft., Lillooet Dist., British Columbia Aug 4skin +  
part. skel.  
522  
171335♂ red crossbill ("bird 610" on tape) wt. 35.8 gm  
L  $5.4 \times 5.3$   
testes R  $5.2 \times 4.5$ ; little fat; wing moltskin +  
part. skel.  
523  
171336♀ red crossbill ("bird 611" on tape) wt. 41.4 gm.  
fatty brood patch  
ovary  $8.0 \times 4.9$  mm, largest follicle = 2.0 mm; wing molt with 522 pairskin +  
part. skel.  
524  
171337♂ red crossbill ("bird 612" on tape) wt. 38.8 gm.  
L  $6.2 \times 6.2$   
testes R  $5.8 \times 5.0$ ; moderate fatskin +  
part. skel.  
525  
171338♂ red crossbill ("bird 613" on tape) wt. 34.7 gm.  
L  $3.6 \times 3.5$   
testes R  $3.8 \times 3.9$ ; little fat

Aug 5

skin +  
part. skel.  
526  
171435♂ white-winged crossbill wt. 27.5 gm.  
L  $6.3 \times 5.1$   
testes R  $6.3 \times 5.6$ ; moderate fat; no moltskin +  
part. skel.  
527  
171339♂ red crossbill ("bird 615" on tape) wt. 27.9 gm.  
L  $5.7 \times 4.8$   
testes R  $5.0 \times 4.6$ ; little fat; no moltskin +  
part. skel.  
528  
171340♂ red crossbill ("bird 616" on tape) wt. 28.1 gm.  
L  $3.9 \times 3.7$   
testes R  $3.8 \times 3.5$ ; no fat; no moltskin +  
part. skel.  
529  
171341juv ♂ red crossbill ("bird 617" on tape) wt. 26.3 gm.  
L  $2.2 \times 2.0$   
testes R  $2.0 \times 2.0$ ; little fatskin +  
part. skel.  
530  
171342♂ red crossbill ("bird 614" on tape) wt. 31.3 gm.  
L  $3.6 \times 3.3$   
testes R  $3.2 \times 2.7$ ; no fat; no moltskin +  
part. skel.  
531  
171343juv ♂ red crossbill ("bird 618" on tape) wt. 28.9 gm  
L  $3.8 \times 3.6$   
testes R  $3.0 \times 3.0$ ; no fatskin +  
part. skel.  
532  
171344juv ♂ red crossbill ("bird 619" on tape) wt. 28.0 gm  
L  $3.9 \times 4.4$   
testes R  $3.7 \times 3.4$ ; no fat



J. Groth  
1987

catalog

61.

Thompson Plateau, 7 mi. E + 2 mi. S Clinton, elev. 2900 ft.,  
Lillooet Dist., British Columbia Aug 5 (cont'd)

skin +  
part. skel.  
533  
171345

juv ♀ red crossbill ("bird 620" on tape) wt. ~~28.0~~ 21.9 gm

ovary  $3.6 \times 2.3$  mm; little fat

skin +  
part. skel.  
534  
171346

♂ red crossbill ("bird 621" on tape) wt. 27.6 gm

testes L  $3.9 \times 3.5$   
R  $3.4 \times 3.4$ ; little fat; wing molt

Aug 6

skin +  
part. skel.  
535  
171347

♂ red crossbill ("bird 622" on tape) wt. 39.3 gm.

testes L  $5.3 \times 4.8$   
R  $4.7 \times 4.7$ ; little fat; wing molt

skin +  
part. skel.  
536  
171348

♀ red crossbill ("bird 623" on tape) wt. 34.9 gm.

ovary  $5.4 \times 4.2$  mm; little fat; wing molt

skin +  
part. skel.  
537  
171349

juv ♀ red crossbill ("bird 625" on tape) wt. 30.2 gm.

ovary  $4.4 \times 3.5$  mm, undevel; little fat; body molt

skin +  
part. skel.  
538  
171350

juv ♀ red crossbill ("bird 624" on tape) wt. 23.4 gm

ovary  $5.0 \times 3.2$  mm; no fat;

skin +  
part. skel.  
539  
171351

juv ♀ red crossbill ("bird 628" on tape) wt. 29.4 gm

ovary  $4.3 \times 3.1$ ; little fat;

skin +  
part. skel.  
540  
171353

juv ♀ red crossbill ("bird 627" on tape) wt. 29.7 gm.

ovary  $4.2 \times 3.4$ ; undevel.; little fat; no molt

skin +  
part. skel.  
540  
171352

♂ red crossbill ("bird 630" on tape) wt. 37.5 gm.

testes L  $4.0 \times 3.6$   
R  $3.6 \times 3.6$ ; little fat

skin +  
part. skel.  
542  
171354

♂ red crossbill ("bird 631" on tape) wt. 37.5 gm.

testes L  $5.8 \times 5.3$   
R  $5.6 \times 4.9$ ; little fat; wing molt

skin +  
part. skel.  
543  
171355

juv ♀ red crossbill ("bird 626" on tape) wt. 34.8 gm.

ovary  $7.4 \times 5.1$  mm, collapsed follicles, little fat  
oviduct ent; edematous brood patch no molt

skin +  
part. skel.  
544  
171356

juv ♀ red crossbill ("bird 629" on tape) wt. 29.1 gm.

ovary  $4.0 \times 3.4$  mm; undevel.; moderate fat.



J. Groth  
1987

Thompson Plateau, 7 mi. E + 2 mi. S Clinton,  
elev. 2900 ft, British Columbia Aug 7

skint  
part. skel.  
545  
171357

juv ♀ red crossbill ("bird 633" on tape) wt. 23.9 gm

ovary 4.0 x 3.8 mm, under.; little fat

skint  
part. skel.  
546  
171358

♂ red crossbill ("bird 634" on tape) wt. 34.2 gm.

testes L 5.0 x 4.5  
R 4.6 x 4.6; little fat

skint  
part. skel.  
547  
171359

♀ red crossbill ("bird 632" on tape) wt.

ovary 4.1 x 3.6 mm, under.; little fat

Aug 8

skint  
part. skel.  
548  
171360

♀ red crossbill ("bird 636" on tape) wt. 28.8 gm.

ovary 5.7 x 4.5 mm, sl. enl.,  
largest fol. = 1.2 mm no brood patch; little fat

skint  
part. skel.  
549  
171361

juv ♀ red crossbill ("bird 637" on tape) wt. 23.3 gm.

ovary 4.0 x 3.0 mm, under.; no fat

skint  
part. skel.  
550  
171362

juv ♀ red crossbill ("bird 638" on tape) wt. 29.8 gm.

ovary 5.0 x 3.6 mm, under.; little fat

skint  
part. skel.  
551  
171363

♂ red crossbill ("bird 640" on tape) wt. 26.3 gm.

testes L 3.1 x 3.0  
R 3.0 x 2.6; little fat

skint  
part. skel.  
552  
171364

♀ red crossbill ("bird 644" on tape) wt. 30.4 gm.

ovary 5.4 x 4.2 mm, sl. enl., largest  
follicle = 2.1 mm; inactive brood patch; little fat

skint  
part. skel.  
553  
171365

juv ♂ red crossbill ("bird 635" on tape) wt. 26.1 gm.

testes L 3.2 x 2.8  
R 2.7 x 2.7; little fat

skint  
part. skel.  
554  
171366

juv ♂ red crossbill ("bird 642" on tape) wt. 23.5 gm.

testes L 2.1 x 1.8  
R 1.6 x 1.6; little fat

skint  
part. skel.  
555  
171367

juv ♀ red crossbill ("bird 639" on tape) wt. 29.3 gm.

ovary 4.4 x 4.4 mm, under.; little fat

skint  
part. skel.  
556  
171368

juv ♀ red crossbill ("bird 641" on tape) wt. 24.0 gm.

ovary 4.2 x 3.0 mm, under.; little fat

skint  
part. skel.  
557  
171369

♂ red crossbill ("bird 643" on tape) wt. 34.6 gm.

testes L 5.9 x 4.6  
R 5.2 x 4.6; no fat;



1. Growth  
1987

Thompson Plateau, 7 mi. E + 2 mi. S Clinton, elev.  
2900 ft. British Columbia August 9

skint  
part. skel.  
558  
171436

juv ♂ white-winged crossbill

wt. 20.2 gm.

testes L 1.1 mm  
R 1.0 mm; no fat;

skint  
part. skel.  
559  
171370  
pair

♂ red crossbill ("bird 650" on tape) wt. 37.8 gm.  
testes L 5.2 x 4.5  
R 4.6 x 4.4; little fat crop w/ one large  
pine seed (saved)

skint  
part. skel.  
560  
171371

♀ red crossbill ("bird 649" on tape) wt. 33.9 gm.  
inactive brood patch (not fatty); wing molt; little fat  
ovary enl.; 5.2 x 5.2 mm, largest fol. = 1.9 mm

skint  
part. skel.  
561  
171372

juv ♀ red crossbill ("bird 645" on tape) wt. 29.4 gm.  
ovary 3.3 x 2.6 mm, under.; little fat

skint  
part. skel.  
562  
171373

juv ♀ red crossbill ("bird 646" on tape) wt. 28.1 gm.  
ovary 3.2 x 2.7 mm; under.; little fat

skint  
part. skel.  
563  
171374

juv ♀ red crossbill ("bird 647" on tape) wt. 28.8 gm.  
ovary 3.6 x 2.7 mm, under.; no fat

skint  
part. skel.  
564  
171375

juv ♀ red crossbill ("bird 648" on tape) wt. 33.4 gm.  
ovary 4.1 x 3.0 mm, moderate fat

skint  
part. skel.  
565  
171376  
pair

♂ red crossbill ("bird 651" on tape) wt. 34.4 gm.  
testes L 5.3 x 5.0  
R 5.1 x 4.7; little fat; wing molt; crop full of  
seeds - saved on IN2

skint  
part. skel.  
566  
171377

♀ red crossbill ("bird 652" on tape) wt. 31.0 gm.

killed August 10

Aug 10

skint  
part. skel.  
567  
171378

♂ red crossbill ("bird 305" on tape) wt. not taken

captured March 16, 1985 on Bolinas Ridge, 4 mi. E Bolinas, elev. 1600 ft.,  
Marin Co., Calif. original wing chord = 91.8 mm. original culmen = 14.8 mm.

skint  
part. skel.  
568  
171383

♀ red crossbill ("bird 387" on tape) wt. at capture 31.2 gm.  
captured May 3, 1986 at Sagehen Creek Field Station, 3 mi. NW  
Hobart Mills, elev. 6400 ft., Nevada Co., Calif. No fat at  
capture. original wing chord = 90.9 mm. original culmen = 16.2 mm.





J. Groth  
1987

# Catalog

64.

Barnes Flat, 11 mi. N + 4 mi. W Westwood, elev. 5500 ft.,  
Lassen Co., Calif. Aug 30

skint  
part. skel.  
569  
171379

♂ red crossbill (bird 653 on tape) wt. 33.1 gm.

Testes L 4.0 x 3.8  
R 3.9 x 3.8 . No fat. Seen feeding JGG 570.

skint  
part. skel.  
570  
171380

juv. ♂ red crossbill (bird 654 on tape) wt. 23.5 gm.

Testes L 1.0  
R 1.0 . No fat. Seen being fed by JGG 569.

skint  
part. skel.  
571  
171381

♂ red crossbill (bird 655 on tape) wt. 35.1 gm.

Testes L 1.6  
R 1.5 . No fat.

skint  
part. skel.  
572  
171382

♂ red crossbill (bird 656 on tape) wt. 35.3 gm.

Testes L 1.6  
R 1.6 . Little fat.



J. Groth  
1988

catalog

65.

March 11

Chews Ridge Lookout, 11 mi. S + 9 mi. E Carmel Valley,  
elev. 4900 ft., Monterey Co., Calif.

1671 skin+part  
skel. 573

ad. ♂ purple finch, testes L  $2.2 \times 2.1$  R  $2.2 \times 2.1$  wt 21.0 gm.

song recorded on end of tape 1684B; little fat

Animal Behavior Station, University of California,  
Berkeley, Calif. March 21, 1988

173373 skel. only  
574

ad ♂ red crossbill (bird "318" on tape)

captive-raised, born at ABS to birds "37" and "43"

testes L  $4.8 \times 4.3$  mm R  $4.4 \times 4.4$  mm; skeleton only, with tissues

cause of death unknown

Huachuca Mts., near Reef Mine, elev. 7200 ft.,

9 mi. S Sierra Vista, Cochise Co., Ariz., March 31

171752 skin+part  
skel. 575

ad ♂ red crossbill (#657)

wt 32.4 gms.

testes L  $1.4 \times 1.2$  R  $1.3 \times 1.2$ ; no fat

171753 skin+part  
skel. 576

ad ♀ red crossbill (#658)

wt. 31.7 gms

1 ovary  $5.6 \times 4.0$  mm, largest ovum = 1.2 mm; little fat

171754 skin+part  
skel. 577

ad ♂ red crossbill (#659)

wt 31.4 gms.

testes L  $3.6 \times 3.0$  R  $3.2 \times 3.0$ ; no fat

171755 skin+part  
skel. 578

ad ♀ red crossbill (#660)

wt. 34.1 gms.

ovary  $5.0 \times 3.9$  mm, largest follicle = 0.8 mm; little fat

171756 skin+part  
skel. 579

ad ♂ red crossbill (#661)

wt. 30.3 gms.

testes L  $3.9 \times 3.5$  R  $3.9 \times 3.3$ ; no fat

171757 skin+part  
skel. 580

ad ♀ red crossbill (#662)

wt. 30.9 gm.

ovary  $3.5 \times 3.0$  mm, no ent. follicles, no fat



J. Groth  
1988

Catalog

66.

1 1/2 mi. S + 1 mi. E Summerhaven, elev. 7600 ft., Santa  
Catalina Mts., Pima Co., Ariz. April 4

171725 skin+part.  
skel. 581

ad ♂ red crossbill (#665)

wt. 35.4 gms.

testes L 3.0 x 2.7  
R 2.6 x 2.4 ; little fat

171726 skin+part.  
skel. 582

ad ♀ red crossbill (#669)

wt. 30.6 gm.

~~testes~~ ovary 5.4 x 4.4 mm, no ent. follicles, no fat

171733 skin+part.  
skel. 583

ad ♀ red crossbill (#663) captured April 3 wt. 33.3 gm.

ovary 5.3 x 3.3 mm, no ent. follicles, moderate fat

171727 skin+part.  
skel. 584

ad ♀ red crossbill (#670)

wt. 33.4 gm.

ovary 5.0 x 4.4 mm, no ent. follicles, little fat

171728 skin+part.  
skel. 585

ad ♀ red crossbill (#671)

wt 30.1 gm.

ovary 4.7 x 4.2 mm, no ent. follicles, no fat

171729 skin+part.  
skel. 586

ad ♂ red crossbill (#666)

wt 32.4 gm.

testes L 4.1 x 3.0  
R 2.8 x 2.4 ; little fat

171730 skin+part.  
skel. 587

ad ♀ red crossbill (#667)

wt 31.5 gm.

ovary 4.9 x 4.5 mm, largest ovum = 0.9 mm, little fat

171731 skin+part.  
skel. 588

ad ♀ red crossbill (#672)

wt. 31.4 gm.

ovary 4.4 x 3.3 mm, largest ovum = 0.65 mm, no fat

171732 skin+part.  
skel. 589

ad ♂ red crossbill (#675)

wt 30.3 gm.

testes L 1.7 x 1.4  
R 1.6 x 1.4 ; no fat

171733 skin+part.  
skel. 590

ad ♂ red crossbill (#668)

wt. 32.5 gm.

testes L 1.8 x 1.7  
R 1.6 x 1.6 ; no fat

171734 skin+part.  
skel. 591

ad ♂ red crossbill (#677)

wt. 29.3 gm.

testes L 1.2 x 1.0  
R 1.0 x 1.0 ; no fat

171735 skin+part.  
skel. 592

ad ♂ red crossbill (#674)

wt. 33.8 gm.

testes L 1.4 x 1.2  
R 1.3 x 1.3 ; little fat

171736 skin+part.  
skel. 593

ad ♀ red crossbill (#673)

wt. 31.4 gm.

ovary 4.0 x 3.7 mm, no ent. follicles, no fat



## catalog

J. Groth  
19881 1/2 mi. S + 1 mi. E Summerhaven, elev. 7600 ft., Santa  
Catalina Mts., Pima Co., Ariz. April 4 (cont'd)1724 skin + part  
skel. 594ad ♂ red crossbill (#664) captured April 3 wt. 39.9 gm.  
testes L 1.8 x 1.6  
R 1.7 x 1.7; no fat1737 skin + part  
skel. 595ad ♀ red crossbill (#676) wt. 31.2 gm.  
ovary 5.0 x 4.4 mm, largest follicle = 1.0 mm, no fat4 mi. S Walker, elev. 7000 ft., Bradshaw Mts.,Yavapai Co., Ariz.April 6171672 skel. only  
596

ad ♀ Cassin's finch ovary 4.5 x 3.5, undeveloped wt. 28.2 gms.

wing (unflattened chord) = 90.3 mm, tail = 61.0 mm

April 7171669 skel. only  
597

junco (song on tape 85B) eyes black wt. 20.9 gms.

wing (unfl. chord) = 87.5, tail = 76.0 testes L 7.3 x 4.8  
R 6.7 x 4.4 no fat171670 skel. only  
598

junco, eyes darkish yellow with black pupil wt. 18.5 gms.

wing (unfl. chord) = 82.0, tail = 74.4 testes L 8.3 x 5.2  
R 6.3 x 5.0 no fat4 mi. N + 6 mi. E Williams, elev. 7000 ft.,Cocconino Co., ArizApril 8171778 skel. only  
599

pine siskin - testes left 2.5 x 2.0 mm no wt.

Animal Behavior Station, University of California,Berkeley, Calif.April 151720 skin + part  
skel. 600

ad ♂ red crossbill ("bird 273" on tape) wt. 23.8 gm.

captured October 21, 1984 at this locality, kept

as captive until found dead by Bob Baiz

(animal care technician) on April 14, 1988; weight

at death = 25.0 gm.; testes @ death L 1.6 x 1.3  
R 1.1 x 1.1;

moderate fat at death





J. Groth  
1988

Catalog

68.

17/696 601 ♂ red crossbill ("bird 678" on tape) wt. 34.3 gm.  
testes  $\text{L } 1.8 \times 1.2$   
 $\text{R } 1.4 \times 1.3$ ; moderate fat; no molt

Animal Behavior Station, University of California,  
Berkeley, Alameda Co., Calif. 12 June 1988

4932 ~~WINTER~~ 602 } captive-raised baby crossbills, found dead  
~~JULY~~ 603 } in cell (one on floor, 2 in nest) all sibs  
~~WINTER~~ 604 } and young of "33" and "59" (on tape)

171721 ~~skel. only~~ 605 juv red crossbill ("wheezy" on tape) born in  
captivity to "59" and "33". Eggs layed about  
10 March, 1988, bird fledged about 10 April. Sib  
of 166 695 ("clip"). ovary  $3.2 \times 2.1$  @ death. Died 18 June.  
Prosser Creek, 1 mi. W Hobart Mills, elev. 6000 ft.,  
Nevada Co., Calif. June 29

1701 ~~skin+part.~~ ~~skel.~~ 606 ♂ red crossbill (bird 680 on tape) wt. 37.6 gm.  
 $\text{L } 5.5 \times 4.3$   
Testes  $\text{R } 4.8 \times 4.1$  . Moderate fat. Crop empty.

1702 ~~skin+part.~~ ~~skel.~~ 607 ♀ red crossbill (bird 683 on tape) wt. 36.1 gm.  
Ovary  $7.8 \times 5.1$ , largest fol. = 1.6 mm. Oviduct ent. <sup>Bare belly.</sup> Moderate fat

1703 ~~skin+part.~~ ~~skel.~~ 608 ♂ red crossbill (bird 679 on tape) wt. 34.0 gm.  
 $\text{L } 4.9 \times 3.9$   
Testes  $\text{R } 4.1 \times 4.1$ . Moderate fat.

1704 ~~skin+part.~~ ~~skel.~~ 609 ♀ red crossbill (bird 682 on tape) wt. 34.1 gm.  
Ovary  $7.3 \times 5.2$ , largest fol = 2.0 mm. <sup>oviduct ent. Bare belly.</sup> Moderate fat.

171705 ~~skin+part.~~ ~~skel.~~ 610 ♀ red crossbill (bird 684 on tape) wt. 28.2 gm.  
Ovary  $4.7 \times 3.8$ , no ent. fol, No fat.



J. Groth  
1988

catalog

69.

Prosser Creek, 1 mi. W Hobart Mills, elev. 6000 ft.,  
Nevada Co., Calif. June 30

- 71707 skin+part. 611 ♂ red crossbill (bird 685 on tape) wt. 33.2 gm.  
Testes L  $3.1 \times 3.0$   
R  $3.0 \times 3.0$ . Little fat.
- 71708 skin+part. 612 ♂ red crossbill (bird 689 on tape) wt. 31.7 gm.  
Testes L  $4.4 \times 3.9$   
R  $3.9 \times 3.9$ . No fat.
- 71706 skin+part. 613 ♂ red crossbill (bird 681 on tape) wt. 36.0 gm.  
Testes L  $5.3 \times 4.8$   
R  $4.5 \times 4.5$ . Little fat. Captured June 29, 1988.
- 71709 skin+part. 614 ♂ red crossbill (bird 690 on tape) wt. 35.7 gm.  
Testes L  $3.7 \times 3.6$   
R  $3.4 \times 3.4$ . Moderate fat. Crop empty.
- 71710 skin+part. 615 ♀ red crossbill (bird 691 on tape) wt. 33.2 gm.  
ovary  $6.9 \times 5.2$ , largest fol. = 1.8 mm, bare belly Crop empty. oviduct enl. Little fat.
- 71711 skin+part. 616 ♂ red crossbill (bird 692 on tape) wt. 32.9 gm.  
Testes L  $5.6 \times 5.0$   
R  $5.3 \times 4.8$ . Little fat.
- 71712 skin+part. 617 ♂ red crossbill (bird 686 on tape) wt. 32.7 gm.  
Testes L  $4.2 \times 3.7$   
R  $3.9 \times 3.7$ . No fat.
- 71713 skin+part. 618 ♀ red crossbill (bird 687 on tape) wt. 29.5 gm.  
Ovary  $6.2 \times 5.0$ , largest f = 1.7 mm. No fat. Bare belly. oviduct. sl. enl.
- July 1
- 71714 skin+part. 619 ♂ red crossbill (bird 694 on tape) wt. 35.6 gm.  
Testes L  $6.8 \times 5.9$   
R  $5.9 \times 5.4$ . Moderate fat. Crop empty.
- 71715 skin+part. 620 ♀ red crossbill (bird 695 on tape) wt. 36.1 gm.  
Ovary  $7.2 \times 5.5$ , largest fol = 2.1 mm No bare belly. oviduct enl. Mod. fat.
- 71716 skin+part. 621 ♀ red crossbill (bird 696 on tape) wt. 30.6 gm.  
Ovary  $5.4 \times 4.4$ , largest f. = 1.2 mm. Brood patch. Little fat.
- 71717 skin+part. 622 ♂ red crossbill (bird 688 on tape) wt. 34.7 gm.  
Testes L  $4.1 \times 2.7$   
R  $3.2 \times 3.2$ . Moderate fat. Captured June 30, 1988.
- 71718 skin+part. 623 ♂ red crossbill (bird 693 on tape) wt. 30.1 gm.  
Testes L  $3.9 \times 3.4$   
R  $3.4 \times 3.4$ . No fat.



J. Groth  
1988

catalog

70.

Prosser Creek, 1 mi. w Hotant Mills, elev. 6000 ft.,  
Nevada Co., Calif. July 2

71719 skin + part  
skel. 624

♀ red crossbill (bird 497 on tape) wt. 31.9 gm.  
oviduct enl. No brood patch. Light fat.  
ovary 7.1 x 5.2, largest fol. = 1.8 mm. Captured July 1, 1988.

71673 skel. only  
625

near Red Bluff, Interstate 5, California July 21  
♀ red crossbill (bird "06" on tape)

71722 skel. only  
626

♀ red crossbill (bird 274 on tape)

71674 skin + part  
skel. 627

Baker Beach forest, 2 mi. S Sea Lion Point, sea level,  
Lane Co., Oregon July 22

♀ red crossbill (bird 699 on tape) wt. 27.9 gm.  
oviduct huge and swollen, 3 collapsed follicles, no  
yolky follicles, active brood patch, ovary 6.1 x 5.1 mm.  
little fat. Mate of JGG 628.

675 skin + part  
skel. 628

♂ red crossbill (bird 698 on tape) wt. 28.1 gm.  
Testes L 5.4 x 4.2  
R 4.5 x 4.3. No fat. mate of JGG 627.

71676 skin + part  
skel. 629

July 23  
♀ red crossbill (bird 700 on tape) wt. 24.5 gm.  
ovary 6.6 x 4.8 mm, largest fol. = 2.1 mm, oviduct sl. enl.,  
no brood patch, no fat



Odell Creek, 7 mi. NE Crescent Lake, elev. 4400 ft.,  
Klamath Co., Oregon July 24

1677 skin+mont.  
skel. 630

♂ red crossbill (bird 705 on tape) wt. 34.4 gm.

Testes L  $5.9 \times 4.5$   
R  $5.1 \times 4.6$  Little fat.1678 skin+mont.  
skel. 631

♂ red crossbill (bird 707 on tape) wt. 33.3 gm.

Testes L  $5.4 \times 4.8$   
R  $4.9 \times 4.2$  No fat.1679 skin+mont.  
skel. 632♀ red crossbill (bird 706<sup>8</sup> on tape) wt. 34.9 gm.Ovary  $12.1 \times 9.4$  mm, one yolky 6.5 mm follicle,  
another 3.1 mm follicle, oviduct huge, brood patch,  
mate of JGG 633, Little fat1680 skin+mont.  
skel. 633

♂ red crossbill (bird 709 on tape) wt. 32.8 gm.

Testes L  $5.3 \times 4.9$   
R  $4.7 \times 4.7$  No fat.1681 skin+mont.  
skel. 634

♂ red crossbill (bird 701 on tape) wt. 30.8 gm.

Testes L  $5.5 \times 4.5$   
R  $4.7 \times 4.7$  No fat.1682 skin+mont.  
skel. 635

♂ red crossbill (bird 703 on tape) wt. 30.6 gm.

Testes L  $5.5 \times 4.7$   
R  $4.9 \times 4.3$  No fat.1683 skin+mont.  
skel. 636

♂ red crossbill (bird 706 on tape) wt. 29.1 gm.

Testes L  $5.0 \times 4.3$   
R  $3.4 \times 3.4$  No fat.1684 skin+mont.  
skel. 637

♀ red crossbill (bird 704 on tape) wt. 34.3 gm.

Ovary  $8.0 \times 6.1$  mm, several yellowish 2.6 mm follicles,  
brood patch, No fat.1685 skin+mont.  
skel. 638

♀ red crossbill (bird 702 on tape) wt. 29.4 gm.

Ovary  $6.4 \times 5.1$  mm, largest fol. = 2.0 mm, 2 collapsed  
follicles, brood patch, no fat1686 skin+mont.  
skel. 639

♂ red crossbill (bird 711 on tape) wt. 30.1 gm.

Testes L  $5.0 \times 4.8$   
R  $4.4 \times 4.3$  No fat.171687 skin+mont.  
skel. 640

♂ red crossbill (bird 710 on tape) wt. 36.3 gm.

Testes L  $6.2 \times 4.7$   
R  $4.8 \times 4.8$  No fat.





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Catalog

72.

Odell Creek, 7 mi. NE Crescent Lake, elev. 4400 ft.,  
Klamath Co., Oregon July 25

1688 skin+part.  
skel. 641

♀ red crossbill (bird 712 on tape) wt. 29.5 gm.  
Ovary 6.6 x 6.0, largest fol. = 1.8 mm, oviduct  
sl. enlarged, no brood patch, no fat

1689 skin+part.  
skel. 642

♂ red crossbill (bird 713 on tape) wt. 33.8 gm.  
Testes L 4.7 x 4.0  
R 4.1 x 4.1. No fat.

1690 skin+part.  
skel. 643

♂ red crossbill (bird 715 on tape) wt. 33.2 gm.  
Testes L 5.2 x 4.4  
R 4.4 x 4.1. No fat.

1691 skin+part.  
skel. 644

♂ red crossbill (bird 714 on tape) wt. 32.2 gm.  
Testes L 4.7 x 4.0  
R 2.6 x 2.5. Little fat.

1692 skin+part.  
skel. 645

July 26

♂ red crossbill (bird 718 on tape) wt. 31.5 gm.  
Testes L 5.3 x 4.6  
R 4.6 x 4.6. No fat.

1693 skin+part.  
skel. 646

♂ red crossbill (bird 719 on tape) wt. 31.8 gm.  
Testes L 5.3 x 4.5  
R 4.6 x 4.4. No fat.

1694 skin+part.  
skel. 647

♀ red crossbill (bird 717 on tape) wt. 32.5 gm.  
Ovary 7.1 x 5.3, largest fol. = 1.8 mm, thick and  
edematous brood patch, no fat.

1695 skin+part.  
skel. 648

♂ red crossbill (bird 716 on tape) wt. 32.2 gm.  
Testes L 4.9 x 4.7  
R 4.8 x 4.2. No fat.

Willow Creek, 10 mi. SE Lakeview, elev. 6000 ft.,  
Lake Co., Oregon July 27

1697 skin+part.  
skel. 649

♂ red crossbill (bird 722 on tape) wt. 33.9 gm.  
Testes L 5.0 x 5.0  
R 4.2 x 4.1. No fat.

171698 skin+part.  
skel. 650

♀ red crossbill (bird 721 on tape) wt. 33.6 gm.  
Ovary 6.2 x 5.0, largest fol. = 2.0 mm, no brood  
patch, no fat, mate of 166 651



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Catalog

73.

Willow Creek, 10 mi. SE Lakeview, elev. 6000 ft.,  
Lake Co., Oregon July 27 cont'd

699 skin+part.  
skel. 651

♂ red crossbill (bird 720 on tape) wt. 32.5 gm.  
Testes L  $4.8 \times 4.2$   
R  $4.4 \times 3.9$ . No fat. Mate of SGG 650.

McKenzie Ridge, 3 mi. NE McGaffey, elev. 8100 ft.,

Zuni Mts., McKinley Co., New Mexico August 14

71758 skin+part.  
skel. 652

♂ red crossbill (bird 726 on tape) wt. 32.9 gm.  
Testes L shot  
R  $5.1 \times 4.9$ . No fat.

71759 skin+part.  
skel. 653

♀ red crossbill (bird 727 on tape) wt. 32.9 gm.  
Ovary  $11.5 \times 6.9$  mm, one 4.3 mm yolky ovum, several  
2.5 mm ora, oviduct huge, edematous brood patch.  
Little fat.

171760 skin+part.  
skel. 654

♂ red crossbill (bird 728 on tape) wt. 30.8 gm.  
Testes L  $4.4 \times 4.2$   
R  $4.4 \times 4.0$ . No fat.

171761 skin+part.  
skel. 655

♂ red crossbill (bird 725 on tape) wt. 35.9 gm.  
Testes L  $5.2 \times 4.5$   
R  $4.8 \times 4.0$ . No fat.

171762 skin+part.  
skel. 656

♂ red crossbill (bird 729 on tape) wt. 32.2 gm.  
Testes L  $4.6 \times 4.2$   
R  $4.6 \times 4.0$ . Little fat.

171763 skin+part.  
skel. 657

♂ red crossbill (bird 724 on tape) wt. 35.8 gm.  
Testes L  $5.3 \times 4.5$   
R  $5.3 \times 4.6$ . No fat.

171764 skin+part.  
skel. 658

♀ red crossbill (bird 723 on tape) wt. 34.7 gm.  
Ovary  $8.2 \times 7.0$  mm, one yolky 2.9 mm follicle,  
oviduct enlarged, edematous brood patch, no fat.

71765 skin+part.  
skel. 659

♂ red crossbill (bird 731 on tape) wt. 31.4 gm.  
Testes L  $5.6 \times 4.7$   
R  $4.7 \times 4.7$ . No fat.

171766 skin+part.  
skel. 660

♀ red crossbill (bird 732 on tape) wt. 32.4 gm.  
Ovary  $7.3 \times 5.4$  mm, oviduct enlarged, two collapsed  
follicles, edematous brood patch, no fat.



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Catalog

74.

McKenzie Ridge, 3 mi. NE McGaffey, elev. 8100 ft.,  
Zuni Mts., McKinley Co., New Mexico Aug. 14 Cont'd

1767 skin+part.  
skel. 661 ♂ red crossbill (bird 733 on tape) wt. 35.8 gm.

Testes L 6.1 x 5.1  
R 5.4 x 5.2. Little fat.

1768 skin+part.  
skel. 662 ♀ red crossbill (bird 730 on tape) wt. 34.4 gm.

Ovary 12.7 x 8.1 mm, one yolk 6.0 mm follicle, one  
collapsed follicle, oviduct huge, edematous brood  
patch, little fat, mate of J66 659.

1769 663

Aug 15

skin+part.  
skel. 663 ♂ red crossbill (bird 734 on tape) wt. 31.6 gm.

Testes L 4.9 x 4.0  
R 4.8 x 4.7. Little fat.

1770 skin+part.  
skel. 664 ♂ red crossbill (bird 735 on tape) wt. 33.9 gm.

Testes L 6.3 x 6.0  
R 6.3 x 6.0. No fat.

1771 skin+part.  
skel. 665 ♂ red crossbill (bird 736 on tape) wt. 37.7 gm.

Testes L 5.1 x 4.6  
R 4.7 x 4.7. No fat.

1772 skin+part.  
skel. 666 juv. ♂ red crossbill (bird 737 on tape) wt. 33.1 gm.

Testes L 3.7 x 3.3  
R 3.6 x 3.2. No fat.

1773 skin+part.  
skel. 667 ♀ red crossbill (bird 738 on tape) wt. 37.0 gm

Ovary 7.8 x 6.7 mm, largest fol. = 2.1 mm, oviduct not  
enlarged, edematous brood patch, mate of J66 668,  
moderate fat.

1774 skin+part.  
skel. 668 ♂ red crossbill (bird 739 on tape) wt. 35.9 gm.

Testes L 5.2 x 4.8  
R 5.0 x 5.0. No fat.

669 August 16

1775 skin+part.  
skel. 669 ♀ red crossbill (bird 740 on tape) wt. 32.6 gm.

Ovary 8.5 x 6.2 mm, 3 collapsed, oviduct  
enlarged, edematous brood patch, little fat.

1776 skin+part.  
skel. 670 ♂ red crossbill (bird 741 on tape) wt. 34.8 gm.

Testes L 5.4 x 4.7  
R 4.1 x 4.0. Little fat.

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1988

McKenzie Ridge, 3 mi. NE McGaffey, elev. 8100 ft.,  
Zuni mts. McKinley Co., New Mexico August 16 cont'd

71777 skin + part.  
skel. 671

♀ pine siskin, moderate fat, wt. 15.4 gms.  
ovary 5.6 x 5.6 mm, 4 collapsed follicles, edematous,  
brood patch, mate of JGG 672

71778 skin + part.  
skel. 672

♂ pine siskin, little fat, wt. 12.1 gm.  
L 5.8 x 5.0  
Testes R 5.0 x 5.0. mate of JGG 671.

August 17

71777 skin + part.  
skel. 673

♂ red crossbill (bird 742 on tape) wt. 36.2 gm.  
L 4.9 x 4.5  
Testes R 4.7 x 4.6. Little fat.

Horsehead Canyon, 1 mi. S + 5 1/2 mi. E Blackrock,  
elev. 6900 ft., McKinley Co., New Mexico, August 19

171666 skin + part.  
skel. 674

♂ plain titmouse, no fat wt. 15.3 gm.  
left testis 1.1 mm

1667 skin + part.  
skel. 675

♀ plain titmouse, no fat wt. 16.6 gm.  
ovary 3.4 x 3.0 mm, granular. No brood patch.

668 skin + part.  
skel. 676

♂ plain titmouse, no fat. wt. 17.3 gm.  
left testis 1.1 mm.

71665 skel. only.  
677

♂ mountain chickadee, no fat, wt. 11.9 gm.  
left testis 1.1 mm.

Barfoot Park, elev. 8200 ft., Chiricahua mts.,  
Cochise Co., Arizona October 4

71738 skin + part.  
skel. 678

♀ red crossbill (bird 744 on tape) wt. 37.2 gm.  
ovary 5.5 x 4.1 mm, granular; little fat; captured Oct. 3

171739 skin + part.  
skel. 679

♂ red crossbill (bird 746 on tape) wt. 41.2 gm  
L 1.6 x 1.4  
Testes R 1.5 x 1.4; little fat; captured Oct. 3





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1988

catalog

76.

Barfoot Park, elev. 8200 ft., Chiricahua Mts.,  
Cochise Co., Arizona October 4

71740 <sup>skin+part.</sup>  
<sup>skel.</sup> 680 ♀ red crossbill (bird 743 on tape) wt. 42.1 gm  
ovary 5.0 x 4.2 mm, granular; little fat; captured Oct 3

Bootlegger Saddle, elev. 9000 ft., Chiricahua Mts.,  
Cochise Co., Arizona October 5

71750 <sup>skin+part.</sup>  
<sup>part. skel.</sup> 681 ♀ red crossbill (bird 748 on tape) wt. 36.9 gm  
ovary 5.1 x 4.7; no fat; killed same day

71751 <sup>skin+part.</sup>  
<sup>part. skel.</sup> 682 ♂ red crossbill (bird 747 on tape) wt. 41.3 gm  
Testes L 1.6 x 1.2  
R 1.4 x 1.2; little fat captured Oct. 4

Barfoot Park, elev. 8200 ft., Chiricahua Mts.,  
Cochise Co., Arizona October 12

71743 <sup>skin+part.</sup>  
<sup>skel.</sup> 683 ♂ red crossbill (bird 750 on tape) wt. 40.9 gm  
Testes L 1.6 x 1.3  
R 1.3 x 1.3; little fat; crop empty

71742 <sup>skin+part.</sup>  
<sup>skel.</sup> 684 ♂ red crossbill (bird 751 on tape) wt. 40.3 gm  
Testes L 1.7 x 1.3  
R 1.3 x 1.2; no fat

71744 <sup>skin+part.</sup>  
<sup>skel.</sup> 685 ♀ red crossbill (bird 752 on tape) wt. 38.8 gm  
ovary 4.9 x 4.7 mm; extensive molt; no fat

October 13

71745 <sup>skin+part.</sup>  
<sup>skel.</sup> 686 ♂ red crossbill (bird 753 on tape) wt. 45.3 gm  
Testes L 2.1 x 1.7  
R 1.7 x 1.6; moderate fat

71749 <sup>skin+part.</sup>  
<sup>skel.</sup> 687 ♀ red crossbill (bird 754 on tape) wt. 41.2 gm  
ovary 4.9 x 4.4; little fat

71746 <sup>skin+part.</sup>  
<sup>skel.</sup> 688 ♀ red crossbill (bird 755 on tape) wt. 42.4 gm  
ovary 5.0 x 4.2; little fat



J. Groth  
1988

catalog

77.

Barfoot Park, elev. 8200 ft., Chiricahua Mts.,  
Cochise Co., Arizona October 14

- 71747 skin + part. 689 ♂ red crossbill (bird 756 on tape) wt. 45.4 gm  
L 1.8 x 1.6  
Testes R 1.4 x 1.4 ; moderate fat
- 71748 skin + part. 690 ♂ red crossbill (bird 757 on tape) wt. 38.9 gm  
L 1.8 x 1.6  
Testes R 1.7 x 1.6 ; little fat
- 71700 skin + part. 691 ~~male~~ ♀ red crossbill (bird 384 on tape)  
captured at Sagehen Creek Field Station,  
3 mi. NW Hobart Mills, elev. 6400 ft.,  
Nevada Co., Calif. on October 27, 1985  
ovary small, fat moderate at time of sacrifice
- 71741 skin + part. 692 ♂ red crossbill (bird 749 on tape) wt. 38.5 gm  
L 2.0 x 1.9  
Testes R 1.8 x 1.7 ; No fat ; captured October 5

Animal Behavior Station, University of California,  
Berkeley, California

- skel only 693 ad ♂ red crossbill (bird 395 on tape) captured  
on 2 June 1986 10 mi. N of Leadville, Colorado,  
elev. 10,500 ft. wt = 33.8 at capture, nesting  
bird seen feeding ♀ at nest. Died in captivity.
- skel only 694 ♀ red crossbill (bird 298 on tape) captured  
on 28 December 1984 at Skell's Point, 4 mi.  
W. Woodside, elev. 1800 ft, San Mateo Co., Calif.  
No wt. at capture. Died in captivity.
- 173374 skel only 695 ♀ red crossbill (bird "clip" on tape) born  
in captivity to birds "59" and "33".  
Eggs layed about 10 March, baby fledged  
(prematurely) on April 10, 1988. Sib of JGG 605



J. Groth  
1989

Catalog

78.

Bootlegger Saddle, elev. 9000 ft, Chiricahua mts.  
Cochise Co., Arizona May 23

- 173383 <sup>skel only</sup> 696 ♂ evening grosbeak <sup>Testes L 8.8 x 6.5  
R 8.9 x 7.8</sup> little fat. wt. 46.9 gm
- 173376 <sup>skint + part skel</sup> 697 ♀ red crossbill (bird 758 on tape) wt. 30.2 gm  
ovary 5.2 x 4.0 mm, largest follicle = 0.9 mm, old  
brood patch, crop empty, no fat
- <sup>skint + part skel</sup> 698 juv. ♀ red crossbill (bird 763 on tape) wt. 27.2 gm  
ovary 3.2 x 2.3 mm, no fat
- <sup>skint + part skel</sup> 699 juv. ♂ red crossbill (bird 762 on tape) wt. 29.3 gm  
testes L 1.1  
R 1.1, no fat
- <sup>skint + part skel</sup> 700 ♀ red crossbill (bird 759 on tape) wt. 30.5 gm  
ovary 5.2 x 4.4, largest fol. = 1.7 mm, no fat
- <sup>skint + part skel</sup> 701 ♂ red crossbill (bird 760 on tape) wt. 33.1 gm  
testes L 3.4 x 3.2  
R 3.0 x 2.4, no fat
- <sup>skint + part skel</sup> 702 juv ♂ red crossbill (bird 761 on tape) wt. 29.2 gm  
testes L 1.0  
R 1.0, no fat

May 24

- 703 ♂ black-throated gray warbler <sup>Testes L 7.2 x 5.2  
R 4.5 x 4.4</sup> No fat. wt. 7.9 gm

Poverty Creek, 8 1/2 mi. N + 10 mi. W Chloride, elev. 7700 ft.

Black Mts., Sierra Co., New Mexico 28 May

- <sup>skint + part skel</sup> 704 juv. ♀ red crossbill (bird 764 on tape) wt. 30.4 gm  
ovary 4.6 x 3.1 mm, no fat

Animal Behavior Station, University of California,  
Berkeley, California July 20

- <sup>skel only</sup> 705 ♀ red crossbill captured at Barfoot Park, elev.  
173375 8200 ft, Chiricahua Mts., Cochise Co., Arizona  
on October 3, 1988. Died in captivity.  
(bird 745 on tape).



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1990

catalog

79.

Animal Behavior Station, University of California, Berkeley, Dec. 12

- 707 captive adult ♀ red crossbill, given number 767 on tape [JG92B]  
wt 28.8 gm; ovary  $5 \times 4$  mm, small, granular. Daughter  
of "33" and "59" in 1989. Held with sister and ♂ 385.
- 708 captive ♀ red crossbill, given number 768 on tape JG92B.  
wt 25.0 gm; daughter of ♂ 385 [tape number] and one of  
the sisters 766 and 767 [uncertain] in May, 1990. Ovary minute.
- 709 captive adult ♂ red crossbill, bird 385 on tape. Captive  
since 1985 when captured at Sycamore Creek, California.  
Lost foot many years ago [1987?]. Had orange plumage  
last year. wt. 27.9 gm. at death. Testes  $\begin{matrix} L & 1.5 \times 1.3 \\ R & 1.4 \times 1.3 \end{matrix}$
- 710 captive adult ♀ red crossbill, given number 766 on tape  
wt. 23.6 gm. Ovary granular,  $5 \times 4$  mm. Nestmate of bird 767.

Dec. 13

- 711 captive adult ♂ red crossbill, bird 771 on tape.  
wt. 26.5 gm Testes small  $\begin{matrix} L & 0.9 \times 0.8 \\ R & 0.8 \times 0.8 \end{matrix}$ . Son of "33" and "59": hatched  
in May, 1990.
- 712 captive adult ♀ red crossbill, bird 770 on tape.  
wt. 26.3 gm. Ovary small, granular,  $4 \times 4$  mm. Daughter of "425"  
and "306": hatched in May, 1990. Kept with "33" and "59" since June.
- 713 captive adult ♀ red crossbill, bird "33" on tape. Captive  
since fall, 1982, when captured by Dr. C.S. Adkisson at  
Blacksburg, Virginia. This bird nested repeatedly in captivity.  
wt. at death = 29.6 gm. Ovary  $6 \times 4$  mm, slightly follicular.

Dec. 14

- 714 captive adult ♂ red crossbill, bird 774 on tape. wt = 24.8 gm.  
Son of "306" and "415" in captivity. Testes  $\begin{matrix} L & 0.9 \times 0.9 \\ R & 0.8 \times 0.8 \end{matrix}$   
[JG 722 & JG 723] Hatched in July, 1990.





Animal Behavior Station, University of California, Berkeley Dec 14

- 715 captive adult ♂ red crossbill, bird 772 on tape. wt. 23.3 gm.  
Son of 425 and 306 in captivity; hatched in May, 1990.  
Kept in cage with "33" and "59" since June, 1990. Testes  $\begin{matrix} L 0.9 \times 0.9 \\ R 0.8 \times 0.8 \end{matrix}$
- 716 captive adult ♂ red crossbill, bird 773 on tape. wt 25.8 gm.  
son of "59" and "33" in captivity; hatched May, 1990.  
Kept in cage with 425 + 306 since June, 1990. Testes  $\begin{matrix} L 1.0 \\ R 1.0 \end{matrix}$
- 717 captive adult ♀ red crossbill, bird 769 on tape. wt. 24.9 gm.  
Daughter of "33" and "59"; hatched in May, 1990. ovary 6x5 mm  
at death.
- 718 captive adult ♂ red crossbill, bird "59" on tape. wt 25.8 gm  
at death. Captive since 1983 when captured at Brush Mt.,  
elev. 2400 ft., 4 mi. NW Blacksburg, Virginia. Extensively  
tape recorded. Father of many captive-bred crossbills with  
female "33". Testes  $\begin{matrix} L 1.1 \\ R 1.0 \end{matrix}$ .

December 17

- 719 captive adult ♂ red crossbill, bird 775 on tape. wt. 25.6 gm.  
Offspring of 425 and 306 in May, 1990. Testes  $\begin{matrix} L 1.0 \\ R 1.0 \end{matrix}$ .  
[JGG 722 x JGG 723]
- 720 captive adult ♀ red crossbill, bird 776 on tape, wt. 27.1 gm.  
offspring of 425 and 306 [JGG 722 x 723] in May, 1990.  
ovary 4x4 mm, granular.
- 721 captive adult ♂ red crossbill, bird 777 on tape, wt. 27.6 gm.  
Offspring of 425 and 306 in May, 1990, Testes  $\begin{matrix} L 1.0 \\ R 1.0 \end{matrix}$   
[JGG 722 x 723].



Groth, J.

1984-1990

Journal

California

Arizona

Oregon

New Mexico

Colorado

Idaho

Eastern trip:

Montana to Newfoundland  
to British Columbia



1. Groth  
1984

Journal

1.

Sagehen Creek Field Stn. 3 mi NW Hobart Mills,  
Nevada Co., Calif. elev. 6400' ft.

Oct 12

Arrived at Sagehen Field Station approx.  
4:30 pm. Brought Danny Glantz, one  
of my students in my Bio 1 Lab, as  
a field assistant. The Field Station  
is surrounded by the Tahoe National  
Forest. We at first got lost and  
went down route 11 (a logging road),  
then stopped and played back a  
cut of 43's toop calls. No response.  
Then found the field station. Brought  
birds 40 and 57 as decoys. No  
response to playbacks or decoys at  
the field station, but perhaps late  
in the day. At the field station,  
two female undergrads showed up to  
do work on small mammals, and  
later Bruce Johnson, a grad student  
from UC Davis, showed up. Bruce  
is doing research on lodgepole pine  
survivorship. He mentioned that  
there is a Mike Morrison at UC Berkeley  
who is in Forestry and studies birds.  
He also mentioned a Blodgett Field  
Station which might be a good  
possibility. I also met Diane Lamb  
who is working at Sagehen as a helper.



Guth  
1984

# Journal

2.

## Sagehen Creek, California

Oct 12

Diane has seen some birds here: two kinds of juncos, two kinds of chickadees, white-crowned sparrows, stellars jays, etc.

Oct 13

I had a net set up at Snythen Field Station by 7:45 a.m. Heard one type 2 crossbill fly over during set-up, but the decoys did not call. Waited around the net area for about an hour. Danny showed-up, but no sounds of crossbills. Played back 43's toops occasionally. Then at about 9:15 we drove N on 89 until hitting a major turnoff to the left (W). The cone crop on all species of conifer appeared poor. According to Mike Yoder-Williams, last year had a very good cone crop, and evidence of this was on the ground in old cones. We played back 43's toops at occasional stops, but no response. We got back to the nets at the Field Station at approx 10:20





J. Guth  
1984

# Journal

3.

## Sagehen Creek, California

Oct 13

and found 4 crossbills (1♂, 3♀) in the net. 3 others were hanging around, one of these was soon captured, the next was shot by me at close range after recordings of vocalizations. The 3rd bird, a ♀, was recorded, then I shot and missed her at long range. Later, a flock arrived, and of this flock of about 12, 4 were captured (3♂, 1♀). We went to have lunch and got back, and a large flock of about 18-20 came from the N, and 11 of these were captured (6♂, 5♀), the rest flew off. All crossbills sounded like Type 2 so far today. We had a break at about 2:30, and got back to the net around 3:15. Two ♂'s were in the net, of unknown flock affiliation. Thus, 23 xbills total for the day. Interesting that all the ♂'s were red, and no birds had any traces of juvenal plumage. The measurements correspond to the vocalizations: Type 2. Little



J. Booth  
1984

Journal

4.

Sagehen Creek, California

Oct 13

fat was found on any individual. No foraging observations were made, but perhaps there will be stomach contents on the one shot-specimen. Some song was heard from wild birds -- sounded like my recollections of Type 2. The nets were rolled-up at about 4:45. 40 and 57 proved to be good decoys.

Oct 14

The early morning at Sagehen Field Station was cold (less than 20°F) and frosty. The nets were rolled up last eve and they were covered with frost this morning. I tried to take record some individuals early and then kill and freeze them. Some wild birds were heard at about 9:15, then all seemed quiet except I thought I heard some Type 2 "over" song phrases. One red male was around the net area but did not get into good position to be caught so he was



J. Booth  
1984

journal

5.

Sagehen Creek, California

Oct 14

then shot out of a tree (#253).

Shortly later, a group of 4 (2♂, 2♀) arrived, sounding like Type 2. The ♀ of one "pair" and the ♂ of the other were captured, then the other ♀ & ♂ took off to the N. together. Danny & I then went to the field station to get lunch, then we went back to the net site at about 11:00, and found 8 x-bills in the net. Two of them looked small enough to be "sitkensis", and another ♂ was Type 2 size, but orange -- unlike any other Type 2 males found on this trip. Later, a ♀ was seen around the net and she was shot -- was probably in the same group as the ♂ in the net. Danny & I then weighed & banded some birds. At one point, a ♂ "sitkensis" sat in a tree and looked down, but he moved on. Pine Giskies (Carulex pinus) came to investigate and several were caught and then released. We left Sagehen at about 1:30 pm.



J. Broth  
1984

# Journal

6.

## Behavior Station, University of California

Nov 4

Went up to the Behavior Station today to tape record #278 and #279 who were captured on 1 November. They did not call much, until about 10:30 when a large flock of Type 2 crossbills flew in. This flock had about 14 members - all Type 2 to my ear - but flew away when I played-back the loop of #43 toops. The birds 279 and 278 were recorded on Tape 45A near the beginning. They were then killed. Also, I shot a ♀ Carduelis tristis with the .22 (JGG 161). Today was clear, warm, sunny. Saw no other crossbills.

Nov 17

Went up to the Behavior Station today with 273 and 274 as decoys. Set up the net in the usual spot by the road. Captured a lone ♀ "Type 3" "sitkensis" (#280 - JGG 162). Later, a flock of 5 of the same call type were captured (the entire flock) 4 ♂'s and 1 ♀. These were numbered 281-285. A short time





J. Groth  
1984

# journal

7.

## Behavior Station

Nov 17 (cont'd) another flock flew in, composed of about 7 birds -- mostly bright red males. Again, Type 3 calls by the entire flock -- none from this flock were captured. The last crossbills seen today were some Type 4 (the V-shaped calls) ... 3 birds, I think 1 ♂ and 2 ♀ came around, and I recorded the ♂ on tape 45 but none of the 3 were captured or shot. They looked small. Also, today a sharp-shinned hawk attacked the caged birds -- but none gave alarm calls. Also seen was a varied thrush. Birds 280, 281, 283, and 284 were killed after tape recording today.

Nov 18 Up at ABS again today, with "57" and 282 and 285. 57 gave some good calls, toops, alarms, and song -- all her usual Type 1 (except the flight calls). 282 and 285 were tape recorded and killed. No wild crossbills were heard or seen today. Pine siskins were abundant again. Saw a flock of waxwings with robins.



J. Broth  
1984

# Journal

8.

## Behavior Station

Nov 25

Went up to the Animal Behavior Station today. Brought birds "57" and 273 as decoys ... had them in the cage together. At about 10:12 am I heard some "Type 4" calls -- apparently two crossbills -- associated with Pine Siskins. Both birds were captured -- numbers 286 and 287, later tape-recorded and killed at about 12:22 am. Two other crossbills were seen today, including a lone ♂ (288) who was captured, and a lone ♀ (289) who was captured. The lone ♂ was identified by ear as Type 2, the lone ♀ as type 3. I'm fairly definite -- almost certain. These were killed immediately to get crop & stomach contents since it has been apparent on these and all birds taken last weekend that they may be eating fruit since they have had purple stuff on their bills. These were 166 168 & 169. The pine siskins today that I've seen also had purple on the bill. Started fieldwork at about 9:45, ended at about 12:30. Fed captives as usual. Partly cloudy today.



J. Groth  
1984

journal

9.

Dec 1

Deb and I went up to Tilden Park to drive around and look for birds. It was nice weather, sunny, warm, up to the mid-60's. No crossbills seen, but siskins were around. We didn't look around too much. Then, we went to ABS to feed the birds. 43 and 33 were building a nest! Just the beginnings of a cup -- I noticed it because 43 was sitting on it for a brief moment giving a weird gaping while I was in their cell. Next door, 59 & 06 were given more pine boughs for stimulus; also 43 & 33 were given more stuff.

Dec 5

Bob Jones & I went up to ABS to check it out since there was a break-in last night. Birds o.k. 43 & 33 had added to their nest -- now a definable cup. We also gave 59 & 06 some redwood boughs.



J. Groth  
1984

journal

10.

Dec 23

Deb and I took a trip down to southern California for Christmas. Today, the two of us, with my brother John, went to the mountains just east of Oceanside, Calif. We traveled around areas near Julian, Calif, just off hwy 78, in pine forests there, but saw no crossbills. At about 10:00 a.m. we decided to go to Mt. Palomar since there are Bisccone Douglas Fir (Pseudotsuga macrocarpa) at areas about 4500-6000 ft. There were apparantly some hunters (something in season?) in some areas of the Cleveland Natl. Forest. On Palomar, we found a couple inches of snow. We spent about 1/2 hr. in the forest, eating lunch -- put out birds "40" and "57" -- but no sign of crossbills. At about 12:30 we went to a parking area on the ridge near the ranger station of the state park -- and six crossbills showed-up -- almost certainly they were Type 3. We were then kicked out of the area by a ranger





J. Gwtr  
1984.

# journal

Dec 23

since the area was "closed" due to plumbing problems in the restrooms. We then drove back to Oceanside. No tape recordings were made.

Dec 27

Back in the Bay Area. Today I met Craig Benkman in San Rafael to look for crossbills in Marin County. After meeting, we first went to Samuel Taylor Park, stopped, and saw a flock of about 14 crossbills feeding in a Douglas fir. The flock was tape recorded... all sounded like Type 3. Craig made some foraging observations. Then we went to Pt. Reyes Nat'l. Seashore, N. of Inverness. Using "40" and "57" as decoys, we saw a pair of Type 2 birds, captured the male, then two more male type 2. The female, who was recorded, escaped. Later, some type 3 flocks passed over the area, four of the flock members were caught. In one of these Type 3 flocks, a type 4 individual was heard (a ♀). Lesser numbers of Type 2 birds were



J. Booth  
1984

# journal

12.

Dec 27 around. A total of 8 birds were captured today. It was sunny, breezy, and pleasant.

Dec 28 Craig told me about a place in San Mateo County where he found a lot of crossbills. I met Craig Benkman at his house today, but he said he was not feeling well, so I went to the place alone. It was at Skey's Point, along Skyline Drive. I walked to the specific point Craig mentioned and saw numerous crossbills foraging on Douglas Fir. First, I heard mainly type 4, but later many type 2 and type 3. Flocks appeared to be monotypic. I set up a net and caught 4 birds, two red ♂'s (one type 3, one type 2) were released, the other two were kept (~~298~~<sup>#1's</sup> 298, 299). I left the area at about 1:30 pm. While at the site, I heard much tooping from a flock of type 2, somewhere in the tree tops. Later, I went to the Animal Behavior Station to record the new birds. I recorded each new



1. broth  
1984/  
1985

# journal

13.

Dec bird, (except ♀ #298) and killed each for specimens. #298 went home with me and was put w/ "#57" and "#40".  
I checked "43" and "33"'s nest -- no eggs.

Jan 3 I checked things out at A.B.S. today... still no eggs for "33".

Jan 8 I checked out A.B.S. today. "33" was on the nest, tight! "43" in good full song. They must now have eggs. All else o.k. -- still nothing interesting in "59" and "06"'s cage. #273 and #274 o.k.

Jan 29 Deb & I went up to ABS to check out the captive birds. "33" was on the nest, "43" in intermittent song. "43" was observed to feed on pine nuts, then go to the nest to feed "33". After about 15-14 min., "33" moved aside and two heads of baby birds appeared from the nest. I was about 2ft. away as I



J. Grote  
1985

journal

14.

Jan 27 observed "33" regurgitate a white paste into the mouths of the babies. The behavior of "06", "59", and "40" was still in question, although "40" was in song. \*273 and 274 appeared to be o.k., but song was not heard in that cell.

Feb. 1 Field trip to Tilden Park with zoology 107 class. We were doing general birdwatching near the tennis court area. Pine siskins, juncos, robins, song sparrows, brown towhees, fox sparrows. At one point, about 5 crossbills flew over -- Type 4. No other crossbills were heard later in the day. The first Allen's Hummingbird was seen today.

Feb 3 Deb and I went to San Mateo county today to look for crossbills on the land of Alan Hosking near San Mateo. "57" and "298" were brought as decoys. Crossbills were scarce. The weather was intermittent drizzling rain. On two occasions I heard





J. Groth  
1985

Journal

15.

Feb 3  
cont.

lone type 3 birds. Also, a group of 3 type 4 birds were attracted to the decoys -- these were tape recorded but flew to the NE after about 2 min. No Type 2 birds seen or heard. Pine siskins were around, also lots of juncos.

Feb 9

At ABS today, the baby crossbills are getting larger. "59" was put in a cell by himself.

Feb 15

Field trip to Joachim-Miller Park with zoo 107 class. On several occasions crossbills were heard -- both Type 3 and Type 4 -- no type 2. Pine siskins, lots of Red-breasted Nuthatches, a Hutton's Vireo, an Allen's Hummingbird, juncos, and other common birds were seen.

Feb 17-18

Deb and I drove out to the Sierra Nevada. We got to the camp near Bass Lake at dusk. In early morning of Feb 18 we heard many Evening Grosbeaks and type 2 crossbills



1. Growth  
1985

journal

16.

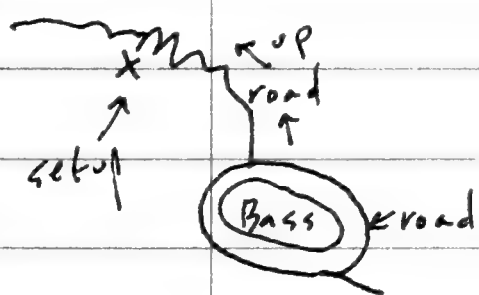
Feb 18 around the camp. A ♀ evening Grosbeak with a broken wing was found at Bass Lake - she was put in a cage and kept for awhile. We got into the truck and drove around looking for a good place to set up the net.

One at least one occasion we stopped  
and got out to listen-- each time  
we heard crossbills, and always type 2.

On a road going up from the NE part of the lake, we found seclusion and a good spot to set up.

It was very quiet in the area, since we really didn't set up until about 9:30. We heard evening Grosbeaks and

some Type 2 crossbills around. Our decoys were placed on a patch of snow (157" at 298). Playbacks of 43's toops lured-in an occasional wild bird -- all Type 2 -- but none showed enough interest. An additional group of Type 3 (?) arrived, but were not very interested. Later, one lone male was heard calling from a nearby tree ... he was tape recorded (tape 45B)





J. Groth  
1985

journal

17.

Feb 18

and later shot (bird #300). It sounded like he had two calls... typical type 2 and a longer-duration variant. No other crossbills were collected. At this locality, I think there were some Pine Grosbeaks about, but I didn't have binoculars along so couldn't make a positive I.D. Later, Deb and I tried to continue on this road, but the passage was impossible due to heavy snow. Later, we drove through Yosemite National Park, then went home.

March 2

Deb & I went to ABS today. "06" and "40" got into "33" and "43"'s cage since the trap door accidentally opened -- "40" had some apparent peck-marks on his head. The two juveniles were banded today: 301 with a left-crossing bill and 302 with a right-crossing bill. Both juveniles had beaks just barely crossing. 302 had some scrape marks on the forehead, either due to harassment or by trying to push through the cage wires. ✓ The juveniles



J. Grotz  
1985

Journal

18.

March 2 were observed to give begging calls. "43" and "44" did not ~~400~~ like before when the juveniles were handled. 59 looked good, as did 273 and 274. "40" and "06" were put back in their cell.

March 9 At A.B.S. today. Got there at about 8:30. All birds ok. 302 still scarred on the upper bill, and now 302 has lost the entire tail. "33" was observed to carry a large piece of dry grass, and a nest was seen to be started in an old pine (Douglas Fir) bough in the cell! 301 & 302 were transferred to cell with "59". First, 301 was put in... "59" chattered and gave the "brip-brew" phrase <sup>many times</sup> -- 301 also chattered. 302 was put in next. Both seemed to be light in weight -- thin. "59" showed no hostility to the juveniles. I then cleaned-up all 4 cells, put in a few fresh boughs. No nesting from "40" and "06", but song from "40". No song from 273, no courtship feeding observed between either 273/274 or "40"/"06". The juveniles 301 & 302





J. Grote  
1985

Journal

19.

March 9 begged, and "59" regurgitated to both. Later, he fed and then regurgitated more. A bit of pine nut fell out of his mouth, and 301 reached to grab it and then ate it. All birds were calling fairly loudly at times. "59" gave nothing but his usual type 1 vocalizations.

Berkeley, Alameda Co., Calif.

March 12 Today I saw 7 crossbills flying over Oxford St. in Berkeley, in front of the campus, at about 8:30 a.m. Definitely not type 2; I think they were type 3 birds. They were going North sort of high up, calling, but I didn't see them land anywhere.

A.B.S.

March 15 Went up to take care of the birds... all seemed well with the juveniles and "59" ... also 273 & 274 o.k., but no song from 273. "06" and "40" o.k.; no nest, but song out of "40". "33" was sitting on her nest -- I went into the cage and flushed



J. Booth  
1985

journal

20.

March 15 her from her nest and noted a single (1) egg in the nest. I gave all birds food & water. Beth Braker came along and she took pictures of birds 301 and 273 with her camera.

Mt. Tam., Marin Co., Calif

March 16 Deb and I went up to Mt. Tam. today. We got there at about 7:15 am. It was cloudy, cool, and windy in some places. We drove through the park area and stopped at the spot we used before. At first, we decided to just walk around, and we heard a lone Type 2 bird flying. We then went back to the car to get the decoys -- "57" and 298. We set up a net next to a small Doug Fir. It wasn't long, and we captured 3 out of a flock of 4 (303, 304, 305) while the 4th was scared-off by a kestrel. There were lots of crossbills around in medium-sized flocks of 10-30 birds. Type 2's were the rarest, while Type 4 was



J. Groth  
1985

# Journal

21.

March 16

most common, followed by Type 3. Later, more birds were lured-in, but it wasn't possible to assess flock membership since birds seemed to be mixing, and call types even seemed to be mixing. At one point a Type 2 ♂ was with 4 others, but then he flew off alone without the others. A total of 11 were captured. We made some observations of foraging -- all on Doug Fir cones still on the trees. We then left the area and moved on to the North. We stopped at one point and walked around near the river -- we saw some small flocks of Type 3 and Type 4, and I also heard one or two Type 2 toops. Later, we went to the Bishop Pine forest near Inverness to check things out -- no Type 2's as might have been expected -- only one Type 3 bird flying over to the north. No evidence of any nesting anywhere -- no song, no juveniles seen today. Later, in the afternoon, I took the captives up to ABS for



J. Grotz  
1985

# journal

22.

March 16 testing of vocalizations. Birds 303, 304, 307, 308, 309, and 313 were recorded and killed. 305, 306, 310, 311, 312 were kept at home overnight.

March 17 ABS, M  
At about 10:00 I took the new captives up to ABS to be recorded. All were recorded, and birds 310, 311, and 312 were killed. 305 (♂) and 306 (♀), both Type 4's, were kept and put in with 273 and 274. The other birds were o.k. 301 & 302 (juveniles) in good shape -- begging from "59" and being fed. "06" and "40" o.k. -- no nesting -- "40" in song. I put a large fresh branch from Bishop pine (collected yesterday) into their cell. I flushed "33" from her nest -- now has 3 eggs. "43" was in song. I thought I heard a lone Type 4 crossbill near ABS during the recording sessions. Also, "33" flushed easily from the nest -- I couldn't touch her before she flew off.





J. Broth  
1985

journal

23.

ABS

March 20

I measured the eggs in the nest of "33" and "43" today, as follows: (total = 3 eggs).

1.  $15.6 \times 21.9$  (max width  $\times$  max length)

2.  $15.2 \times 21.8$

3.  $15.3 \times 23.1$

Each egg was light greenish-white with brown spots -- the spots concentrated on the large end. The nest was measured: inner diameter = 67 mm.

Both "33" and "43" tooped as I measured the eggs, and "33" went back to the nest between each egg very quickly. They settled down quickly and gave "43" gave flight calls when "33" was back on the nest. I was able to touch and stroke the head & back of "33" as she sat on the nest -- she needed to be prodded before moving off. The other cells were o.k. -- still no nesting by "40" & "06". Some fighting notes were heard in the cell with 273, 274, 305 & 306. "301" and 302 still begging from "59" --. All birds continue to eat pine nuts and not the sunflower seeds, and I don't think they're eating any sunflower.



J. Broth  
1985

journal

24.

March 24 Yosemite Nat'l Park, Calif.

I went on a cross-country skiing trip w/ John Canothers, Mark Reynolds, & Melinda Lovett-Jones today. Our trip (Melinda didn't go) went from the Badger Pass parking lot and proceeding in a generally N.E. direction to an overlook - a distance of about 10 mi., one way. Along the way, I observed few birds. Red Crossbills were encountered on 3 occasions, including a sighting at about 11:00 a.m. of 4 individuals (age/sex not noted) in lodgepole pine forest followed by two other encounters of crossbill calls - all of type 2. It was sunny at first, followed by increase in clouds and then snow. Other birds: mt. chickadees, "oregon" juncos, Steller Jays, Ravens, G.C. kinglets.

March 25 ABS.

I went up to feed the birds at about 3:30 p.m. today. All o.k. "33" incubating, no nesting by "06" and "40", lots of calling by 273, 274, 305 & 306. 301 & 302 continue to beg from "59". I am not sure of the call structure of



J. Groth  
1985

# journal

25.

March 25 "59", so I plan to record him next time. A Peromyscus mouse was in the cell of "59", 301 & 302 -- it was killed by me and the cage then made more secure.

April 6 A.B.S. in 33's nest, two of the eggs have hatched, a third has not hatched.

Size of egg not hatched =  $15.6 \times 21.9$

The other two eggs hatched

	<u>314</u>	<u>315</u>
lw	15.1	12.1
ch	6.3	5.5
bd	5.5	4.8
dv	3.2	3.1
wv	5.7	4.9
al	7.3	6.4
ll	4.5	3.6
tr	17.2	14.2
wj	22.5	15.8
	right leg	left leg



1. Groth  
1985

journal

26

May 18.

ABS, May 18

Measurements of bird 315:  
bird still in striped juvenal  
with some green feathers  
intermittent. Bird "33"  
was on her nest --  
one of the three eggs  
hatched -- the other two  
I cracked open and they  
did not look like they  
were fertilized. The young baby probably  
hatched last Tuesday or Wednesday.  
Birds 305 and 273 were removed and  
put in small cages to use as decoys  
for the trip starting tomorrow. Still  
no adult calls heard from 315, although  
some possible alarm calls (type?).

cn	13.0
bd	8.9
dv	5.2
wv	7.4
wt	9.7
ll	10.3
tr	19.3
wg.	84.9 - #8
lw	<del>43.1</del> - 13.7

May 19

Left today to begin the field trip  
planned for Arizona and possibly  
elsewhere. I picked up Pat Kelly  
and took him to LRB @ 7:00 am.  
I then loaded the truck -- had an  
accident with the  $\text{LN}_2$  tank as Bob  
Franklin accidentally rolled some over  
his back -- I then "borrowed" some  $\text{LN}_2$   
from Patton's tank and accidentally poured





J. Groth  
1985

journal

27.

May 19 one of his specimens into my tank.  
We met a bunch of students from  
Zoo 107 for a trip to the Mojave.  
Pat & I drove down I-5 to Bakersfield  
then E to Pinal crater. Pat set a trap  
line. Birds seen included Say's Phoebe,  
Lesser Nighthawk, Mourning Dove, Black-  
throated parrot. Pat caught a  
San Joaquin ground squirrel. We  
later went night driving for hours  
on the Great American Highway.

May 20 Got up with Pat @ 5:15 to check his  
trap line. He got some Desert woodrats,  
some Dipodomys merriami, a Perognathus  
and some Peromyscus. We saw possible  
bobcat tracks. The desert was full  
of whiptail lizards, and some sidewinders  
and Crotalus mitchelli were seen. I left  
Pinal Crater at about 9:15 am to  
go to Tempe to meet Kathy Groschult.  
I got there at about 7:30 pm. Met  
her new husband Frank Bacon of the  
USFWS - a senior staff biologist. We  
talked of our plans for the next few  
days. Kathy plans to census birds



J. Groth  
1985

Journal

28.

May 20 at the Chiricahua Natl. Monument, on  
Thursday & Friday.

May 21 We left Tempe at about 9:00 am --  
Kathy in her jeep and me in my truck.  
We went to Tucson to UofA -- Kathy  
needed to see somebody @ the Natl. Park Service  
Office on campus -- I met Brian Brown,  
who is on the staff there, once worked  
with Kathy on the Grand Canyon surveys --  
BB is the person involved with the  
avifauna of GC and the Kaibab areas.  
We visited the bird collection -- met  
Tom Huels (a grad student of Woolfenden --  
coop. br. stud. in Africa -- never finished) (the  
collection had about 40 L.C. -- miscellaneous  
Ariz. collectors). We then went to  
the highway -- ate lunch in the "dracoons".  
We passed up @ Wilcox, then went in  
to the Chiricahuas, up to Long Park.  
We stopped numerous times along the  
road between the entrance to  
Coronado Natl. Forest and the top @  
Long ~~Peak~~ -- played back crossbill calls  
but no response. We camped for  
the night @ Long Park.



J. Groth  
1965

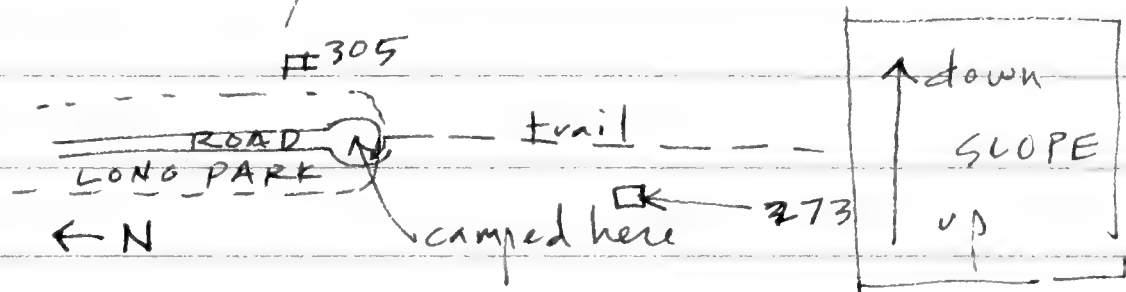
# Journal

29.

## Long Park, Coronado Natl Forest, Cochise Co., Az

May 22

I got up @ daylight (5:15) and set up two nets using 305 and 273 as decoys.



Bird 298 (the 3rd and only other decoy) was put on top of the truck in camp. No sign of crossbills all morning, Kathy and I hiked down the trail 0.7 mi., then turned left and went .25 mi. to Tub Springs -- used playbades along the way and brought 298 along. -- no sign of crossbills. Other birds seen this morning --

yellow-eyed junco

Red faced warbler

warbling vireo

Y-r. warbler

G.C. Kinglet

Mexican Chickadee

Robin

Hermit Thrush

Pine Siskin

Band-tailed Pigeon

Western Bluebird

Western Flycatcher

Hairy Woodpecker (in net - ♂ w/ brood patch)

Pigmy Nuthatch

Rb Nuthatch

Wb Nuthatch (in net - ♂)



J. Groth  
1985

journal

30.

Chiricahua Mts., Cochise Co., Arizona

May 22

When we got back from the hike, I again checked 273's net while Kathy checked 305's net. Nothing in 273's. Kathy found two male red crossbills (#316 & #317) in the net of 305. (this was 12:30 pm) the two were caught between 10:30 - 12:30, and probably were associated with one another, but this is not certain. The nets we left up until about 3:00 pm - no other wild crossbills were caught. Bird 317 was recorded for both food and flight call; 316 was silent. We broke camp and headed to Kathy's cabin on Turkey Creek -- got there at about 6:00 pm. I went down the road to check for possible trapping sites. Then I pulled tissues from 317 and prepared the one specimen. There were w-t Swifts, Blue-throated Hummingbirds, Canyon Wrens, Whippoorwills, Acorn Woodpeckers and a Sulphur-bellied Flycatcher around the cabin.

May 23

Kathy left early this morning to do her census of the Chiricahua Nat'l Mon.





J. Broth  
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31.

Chiricahua Mts., Cochise Co., Arizona

May 23

I rose at dawn, and drove down Turkey Creek Road to Saulsbury Trail, at the end of which I put a net with 305. Immediately a Mexican lay was captured, then released. There were tracks of peccary in the sand there, near a small stream. Later, a painted redstart and an ash-throated flycatcher were captured at this locality. Also, a desert(?) horned lizard was seen here. Bird 298 was used as a decoy up the road a way, near the junction of the road and Mormon Creek trail, up the hill about 60 meters on a rocky opening. Two yellow-eyed juncos were captured there. Also seen were a <sup>black-throated</sup> gray warbler and some gray-colored common bush-tits. No crossbills were heard or seen at either locality, nor at the Grosche cabin where I bathed in the creek! I thought I saw a pair of crossbills at the cabin at one point, but they were probably hepatic tanager. Other common birds were western tanager, white-throated swifts, canyon wrens,



J. Gr. H.  
1985

Journal

32.

Chiricahua Mts, Cochise Co, Arizona

May 23

yellow-eyed juncos (a juvenile was seen, with some breast streaks as begging -- this was right on the creek at dusk. Great-horned owls and whip-poor-wills were heard. Kathy & I walked down Turkey Creek past some cabins -- a beautiful walk -- I took along some pine cones of Chiricahua pine and a little cholla cactus for Debbie.

May 24

Kathy & I both got up at about 4:00 am. We had coffee & cookies for breakfast, packed, said goodbye, and left. Kathy saw a bear on the road on the way out. I drove north, taking Highway 666 through the Apache-Sitgreaves Natl. Forest. In the southern part, it looked like a fairly good cone crop on the ponderosa pine and piñon pine -- both about the only conifers and both with green cones. North of about Hauragan Meadow the ponderosa pines had no old or new cones. I stopped several times here and there with decoys, but obviously soon for crossbills. Just before Springville town



J. Broth  
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# Journal

33.

Arizona trip, cont'd  
to Greer, Arizona, up to the White Mountains.  
The cone crop there was old & dried-up --  
no sign of crossbills, few siskins.  
Many people were fishing there in various  
alpine lakes and streams -- and this was  
only Friday. The decoys were let out  
several times and I walked around  
with playbacks -- but nothing in the  
way of crossbills. Supposedly pine grosbeaks  
occur in this area, but I heard or  
saw none, but it was after noon when  
I explored. Perhaps I should have  
stayed in the area, but I moved on  
to Flagstaff via highways 77 to I 40 --  
I then camped out north of Flagstaff  
off Highway 89.

May 25 Awoke at dawn -- the place I was  
camped was pine, dry, ponderosa pine  
savannah -- cones were on the ground  
under the trees -- dry. There were  
stellar jays here, a few siskins  
flying over, and some broad-tailed  
hummingbirds. The crossbills were put  
out from 5:00 - 6:30, but no sign  
of any wild ones. I then closed up



J. Graft  
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34.

Arizona Trip, cont'd

May 25

and drove on back roads entirely around the San Francisco Peaks near Flagstaff, stopping often and playing taxes and putting out the decoys. The pines here (mainly Ponderosa) were bare, with no new cones - old ones on the ground with a few still on the trees. No crossbills - a few siskins around only. Because of this, I drove N on Hwy 89 to Bitter Springs, Ariz, then on Hwy 89a to Jacob Lake in the Kaibab Natl. Forest. The pines here were barren of cones - but a few ponderosa pines had old cones, and a very few had new green cones. The various spruces and firs on the entire north rim of the Grand Canyon area were bare or had old dry cones only. I went into the Grand Canyon Natl Park to look around - there were a few Douglas Firs on the top of the rim, but apparently nowhere else - and these had some old (still with seeds) cones. A few siskins were heard here, and there were mt. bluebirds, mt. chickadees, yellow-rumped warblers, pine chipping sparrows,





J. Graft  
1985

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35.

Arizona Trip, cont'd

May 25

abundant ravens, some brewers blackbirds. No crossbills anywhere. I drove to a place called Dry Flat Overlook -- which was a forest service fire tower and climbed to the top. A sister flew past, a raven, yellow-rumped warblers, and a violet-green swallow. None of the conifers (for miles) looked good -- some of the white fir had new, green cones -- but no other conifer was putting anything out. I drove then (at about 6:00 pm) to a place called Crazy Joe Overlook -- accessible by dirt road only -- which ends up right on the north rim of the canyon. Here I camped for the night. The place was rather low in elevation -- volcanic-sided towers around -- generally a brushy ponderosa pine/pinyon pine area.

May 26

As soon as there was some light in the sky a pair (♀-♂) of crossbills flew over and were attracted to the decoys. No net was set up. The birds were tape recorded but not captured or shot -- sounded like



J. Broth  
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journal

36.

Arizona trip, cont'd

May 26  
cont'd

Tyler 2 birds and sounded like they call-watchers. They flew off to the W over the Grand Canyon. I then set up nets -- but no other crossbills were heard -- many siskins, B-h grosbeaks, steller jays, ravens, b-g gnatcatchers among other birds. At 9:30 I left, and headed N across the Kaibab. The cone crop on Ponderosa pine looked poor all over. From the Kaibab, I headed W to Las Vegas, got supplies, and proceeded N on Hwy 95. In the afternoon, I explored the small area of Toiyabe Nat'l Forest just NW of Las Vegas. Here the ponderosa cone crop looked better, but old -- one of last year. No crossbills were heard here. As there were many people here I left and continued N to Hwy 266 and went W to Hwy 168 and camped at Westgard Pass for the night.

May 27

At dawn I drove to Hwy 395 and then went N through the Owens valley, then went W on Hwy 108 to cross the Sierra. I stopped many times along the pass area to look for crossbills -- but the cone crops were not good and I encountered



J. Gauth  
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37.

ABS

May 29 New baby bird (of "33" & "43") banded as JG 318  
and measured as follows:

lw	39.2 - 13.3	- very fat -- crop stuffed
cn	8.0	- sheaths on all wing feathers
bd	6.7	- feathers somewhat fluffy
dv	3.6	on head -- elsewhere in
wv	5.7	tracts only - much
wl	7.4	bare-looking skin
ll	5.5	- banded left leg
fr	19.8	- no cross direction evident
wl	41.7 #7	

Bird 315 was also measured as follows:

lw	43.5 -	
cn	13.8	still in streaked plumage
bd	8.9	
dv	5.3	
wv	7.0	
wl	9.7	
ll	11.0	
fr	19.5	
wl	84.7 #9	



J. Guth  
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journal

38.

Arizona trip, cont'd

May 27 few good lodgepole pine areas. No crossbills were encountered. Most other common birds of the Sierra were heard or seen. Also, earlier in the day I stopped in the northern part of the Owens valley (an area of Jeffrey pine) and also explored the road up to Mono Pass -- but found nothing in the way of crossbills. Plenty of Cassin's Finches in the Northern Owens valley in Jeffrey pine areas. From 108 I headed back to the Bay Area.

May 30 California/Oregon trip

I set off today for Northern California to look for crossbills. I head N on I5 to Redding, and from there went W on 299 to Douglas City. From there I went W on Hwy 3 to Hayfork. On May 31 I stopped on Hayfork Summit to search for crossbills, but found nothing. The cone crop on Ponderosa in this area was new and green. From Hayfork, I travelled W on a Natl Forest Road to Hyampom, then continued W on a dirt road until I got to an unidentified dirt road that went S up a mountain just about





J. Grotz  
1985

# Journal

39.

## California/Oregon trip

5 miles W of Hyampom. About 2 1/2 miles up this road I found a place to camp in a recently clearcut area.

May 31 I got up at dawn and set up one net and used all three decoys (273, 298, 305). First, a ~~type~~ one male (lone) was caught, (bird 319) and then another lone male (320). Soon after, a flock of six arrived and all were captured (321-326). At about noon a flock of about 20 crossbills arrived -- and 15 of these were captured. This larger flock was released. The composition of the flock was mixed Types 3 and 4 (about equal ratio) with all adult birds. One type 3 female had faint juvenile traces on the midbelly. No males had cloacal protuberances. I spent all day preparing the 8 specimens (319-326). A pine siskin was nesting nearby, also juncos, o-s flycatchers, r-s towhees, house wrens, western tanagers.

June 1 I set up the net from 6:30 - 9:00 am in the same spot as yesterday, but it was drizzling rain. Nothing was



J. Broth  
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40.

California / Oregon Trip

June 1 captured. I packed up and left, and continued on the dirt road until it connected with 299, then I headed E to Redding again, past Redding to Bieber. From Bieber, I headed N and explored parts of the Modoc Nat'l Forest. W of Bieber to Redding the ponderosa pine cone crop was green -- looks good for this winter. Around 4:00 pm I got on to Hwy 139 and went N into Oregon. By nightfall I was near Calimns Butte, where I camped in a lodgepole pine stand.

June 2 I got up -- cold, frost on the ground. I set out the decoys and set up a net out in the middle of a clearcut. A black-backed woodpecker pair was building a nest hole here. Also seen were gray jays, a clark's nutcracker, townsend's solitaire, black-capped chickadees, r-b nutcrackers. Pine siskins were common. At about 9:30/10:00 a flock of 8 type 2 crossbills flew in -- these were tape recorded, but none were captured. Perhaps I did not have the right kind of decoy. One female came close, but



1. Broth  
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# journal

41.

## California/Oregon Trip

June 2

Calling by other flock members held here back from going all the way down. The flock was tape recorded. They took off to the NE. I packed up and left at about 11:00 am. I first went to the Calaveras Butte lookout (Fox sparrows seen here, also juncos). No crossbills heard or seen. I then went to Chiloquin to get gas, then to Ft. Klamath, and then to the eastern slope of the mountains there. At about 6000' I heard a type 2 crossbill fly over (12:00 noon) - set up a net for about 3 hrs here -- this was just at snowline at the end of <sup>road</sup> 3384. No other crossbills were heard, but siskins abundant. I then left and went W on Hwy 140, then N to Butte Falls, then S to Medford, and continued S on 238 to the Rogue River Nat'l Forest. I camped at the end of a jeep trail at fairly low elev. No good cone crops in this area of mixed conifers.

June 3

I did not set up a net or decoys at this campsite near Applegate Lake. I drove at dawn through parts of the Rogue River



J. Gwalt  
1985

journal

42.

California/Oregon trip

June 3 National Forest, including the Whiskey Peak area. I set up a net with decoys just below Whiskey Peak from 8:00 - 11:30 am., but no crossbills heard -- just siskins, w. tanagers, juncos, y-r warblers, o-s flycatchers. This was an area of mixed conifer w/ Doug Fir and white fir, ponderosa & Jeffrey(?) pines. After this, I left the Nat'l Forest & drove up to Grants Pass, then explored parts of the Siskiyou National Forest just W of Wonder off Hwy 199. This was an area of many dirt roads, cut over Douglas Fir forest with no new cones -- many very old ones on the ground -- perhaps will be a good area in autumn of 1986 - winter/spring of 1987. As it was drizzling rain, and getting dark, I headed toward Grants Pass again, got gas, and went up to Galice, OR, on a branch of the Rogue River -- then climbed up to higher elevations (up a switchback) and found a campsite just above Galice on a ridge facing NE.

June 4 set up the net at dawn. This was an area of some clearcuts - Douglas Fir - small Doug Firs dominating with heavy Knobcone Pine on the





J. Guth  
1985

Journal

43.

June 4 the ridge itself. No crossbills encountered here.  
(cont'd) Giskins, y-r warblers. An o-s flycatcher was caught in the net. I left the area around noon - drove around some, then turned back and drove through the forest to Port Gold Beach. From here, I drove N to Port Orford & got gas, then stopped @ a rest stop (or was that before P.O.?) then continued on to North Bend on Hwy 101. Stopped and explored a dune area just N of North Bend. Here it was a strange variety of lodgepole? pine - scrubby, with closed green cones and many closed grey cones. I almost decided to stay, but went on, past the coastal recreation lands and then East again on Hwy 38 to Cottage Grove, then further east to Dorena, and then went just past Dissota and turned right on a forest road and pulled over and slept here in the Umpqua Nat'l Forest.

June 5 Got up and continued, first N on a forest road and then E on 58 and over the crest of the Cascades. It was cold and drizzling rain on the way. I stopped to explore a pure lodgepole pine area located



J. Groth  
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44.

June 5 on the eastern edge of the crest near Crescent Lake. There appeared to be fairly decent crossbill areas here, but I took the decoys out only for an hour or little more from about 9:30 - 10:30 am - no sign of crossbills. Then I continued east on a Forest road which ended up on Hwy 97 at Gilchrist. Here I drove N for about 2 miles and went east (right) on a logging road and drove around and explored this area. Mainly small and large lodgepole pine stands here, heavily logged, with some mixed ponderosa pines. The p.p.'s were not producing at all here, and probably will not produce this winter (maybe next year?). I drove S on 97 to Chiloquin. ~~Here~~ [On the way, I drove W a bit on a Forest road just S of Beaver Marsh - an area of lodgepole pines. This could have been a fair area for crossbills, but I was there in late afternoon and didn't encounter any (just an antelope and some junco). Siskins here. At Chiloquin I got gas, called home, and then during the phone conversation I heard a crossbill fly over the town of Chiloquin (type 2). The weather



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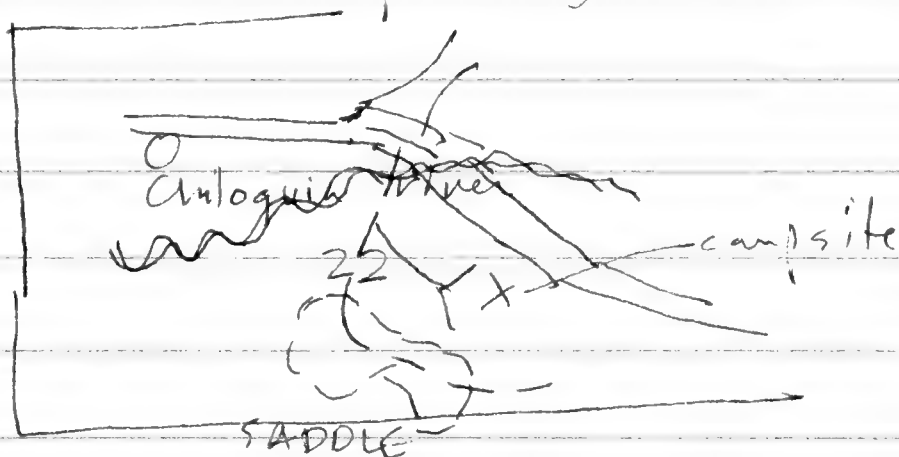
journal.

45.

### California/Oregon Trip.

June 5 had turned partly cloudy. this was about 6:30 m.

then I drove E out of Chilloguin  
then up forest road 22 S to the Saddle Mt.  
area. this was mainly mixed white fir/  
ponderosa pine, sugar pine, and few  
lodgepoles. I drove to some railroad  
tracks, then drove back, it was getting  
dark, and I found a campsite just NE  
of Saddle Mt.





J. GrobL  
1985

# journal

46.

ABS

July 3

Went up to ABS @ 6:00 pm with a bag (3 lb) of pine nuts for the birds. Gave all birds some nuts.

Observed birds 315 and 318 (juveniles)... 318 still giving typical begging calls. All adults in all cells were giving long flight call bouts -- certainly can be heard by all in all cells. Measured the four eggs of bird 33 (incubating)

Bird 33

lw      cu 16.0   bd 9.6   du      w 7.5   w 10.1   l 12.1   t 17.4   w 90.5   patch <sup>crowd</sup>

molting left primary #4 only

broke one fertile egg - caught on string as 33 was removed.

1 21.8 x 16.0      2. 16.0 x 23.7      3 22.2 x 16.3

ABS

July 10

Went to ABS @ about 9:00 am. Bird "43" was found dead in the cell, with "33" of the nest -- 2 young in nest - one egg not hatched (the 4<sup>th</sup> egg destroyed last time). Cause of death not known -- autopsy showed food in his crop (some sunflower seed fragments). Definitely not dehydration since water was in 2 of three dishes. All other birds o.k.

No tissues taken from 43 - full skin & p. skel.

The 2 new babies begged when I touched them, -- heard high "see" call. Bird 318 was heard to give typical begging "chip-er" calls. It appeared that 298 & 213 had a





J. Broth  
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47.

ABS, cont'd

July 10

pair bond. -- Surprisingly not 273/274. Gave  
all birds extra pine nuts for upcoming  
molt time.



J. Groth  
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48.

July 21 ABS

Measurements of 315 and 318, in cell with  
305 & 306.

318 - dark <sup>some on throat</sup> yellow patches (♂?)



cn 14.2 bd 9.2 du 5.3 wu 6.6 wl 9.9 ll 12.1 tr 20.0 u 90.0 lw 32.1 no fat

315 - (♀?) - gray throat & outermost 10's longest both sides  
postjuvemat body molt on flanks, vent, back, head

cn 15.7 bd 9.2 du 5.4 wu 6.7 wl 9.8 ll 11.5 tr 19.6 u 84.5 outermost lw 40.6 no fat



J. Groth  
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journal

49.

Arizona, New Mexico Trip

July 25 Left Berkeley at about 12:30 pm. Put the keys to ABS in Bob Jones' mailbox. Traveled from 580 to I5 (not in San Joaquin valley), and when near CA took I 210 to I 10 east. Traveled past Palm Springs and slept at a wayside just east of Indio, Calif.

July 26 Continued east on I 10, left the wayside rest area at about 5:40 am. Got to Phoenix, Ariz., by 10:30 a.m., got gas in Mesa, Ariz. From there, took 60 to Globe then 70 to Safford. Got gas in Safford (expensive). Took 666 north from Safford. There were rain clouds over most visible high elevation areas in this part of Arizona. The cone crop on the ponderosa and piñon pines in the first pine areas north of Clifton were still green -- only minimally brown on some trees. Couldn't find a suitable dirt road until past the Rose Peak Lookout -- perhaps 5-6 miles north of there. Just after spotting a fine buck in velvet I found a turnoff, to the right (east of 666). The area looked o.k., and at about 6:15 pm I stopped on this dirt road to look around. Then I heard bird #327



J. G. Roth  
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50.

call loudly from the truck, and a pair of Type-2-calling crossbills showed up. The ♀ came down to the ground after I put the caged decoys (327, 298, 273) out. Tried to catch them w/ the hand net, but this did not work. The pair flew off together to the E after this. I then established a camp on this road about  $\frac{1}{3}$  mi. N of the point where I found the pair.

July 27 I had set up some nets the night before along the road where I camped. Early in the morning I heard crossbills, and there was much crossbill interaction and behavior, including songs & flight songs early, beginning at about 5:25 a.m. Got much on tape. Shot a male crossbill, then caught two other (lone?) males in the net. Walked around, and heard crossbills intermittently (all Type 2 sounding). At about 10:30 a pair came down to the caged birds -- could have caught the ♀ but didn't. This pair flew off together. (Type 2 again -- recorded the ♀ on 55B 15-28. At about this time the thunder started to rumble in nearby





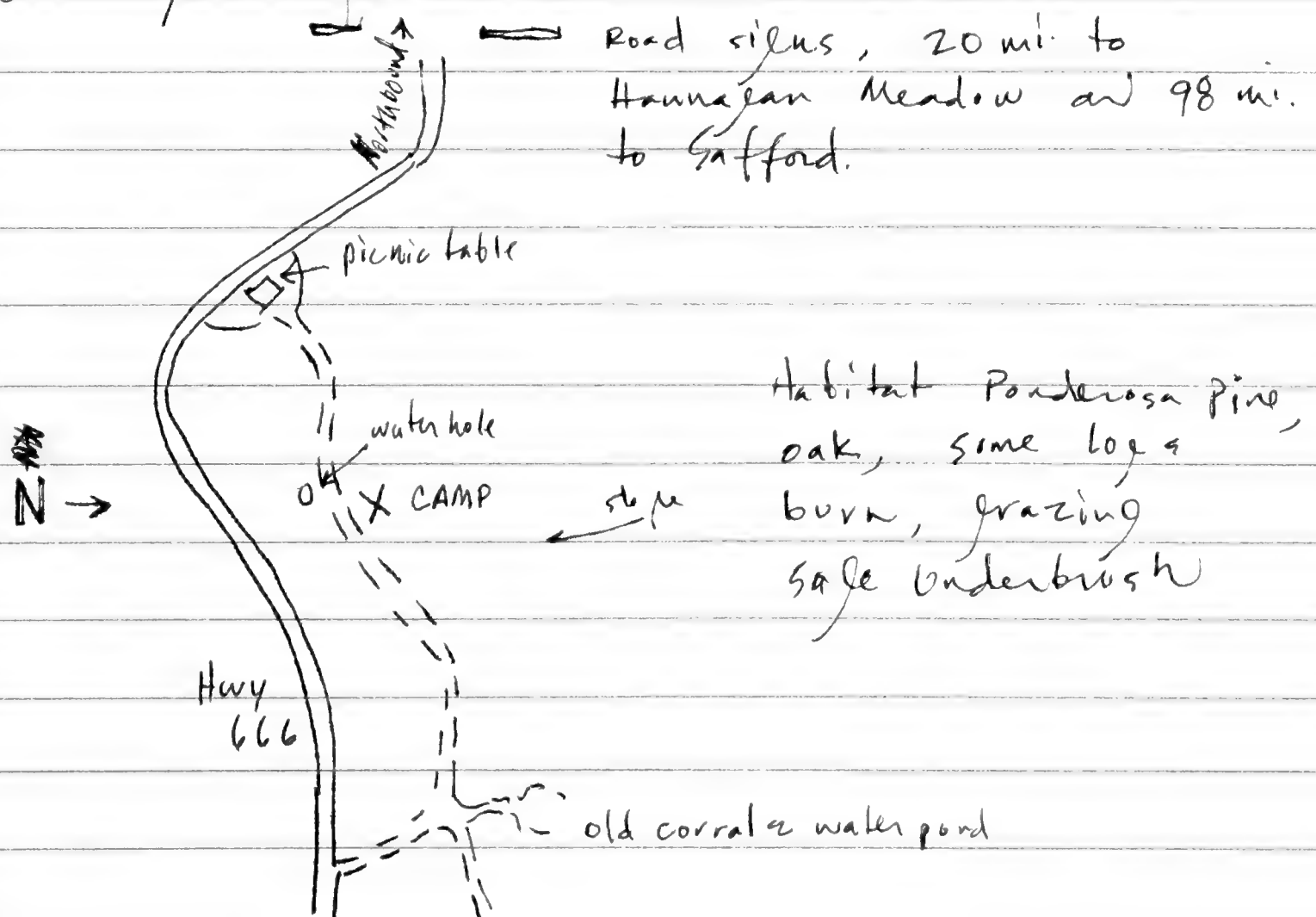
J. Booth  
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51.

July 27

areas, but the camp area remained in sun. Heard intermittent Type 2 Crossbills. The rain began at about 2:15. Before this, a ♀ (350) was caught, with a brood patch, then two males were obtained, one captured (351) and one shot (352). One was likely the mate of 350, but I am not certain which, but I suspect it was 352, but call watch may reveal which. The rain continued for the rest of the day. Other birds in this area were gray-headed juncos, an unknown, unidentified orange-backed hummingbird, ravens, mountain(?) chickadees, acorn woodpeckers, flickers, downy woodpecker.





J. Guth  
1985

journal

52.

July 28. The rain was on and off all morning and into the late afternoon. A few crossbills were encountered during the dry periods, all recorded on tape 56A. Mainly these appeared to be lone males, likely on their way to feed their mates on nests or to forage. A lone bird appeared at approx. 12:30 pm and was giving type 2 calls -- this bird was captured and found to be a late aged juvenile male. The pattern continued throughout the afternoon, and there were heavy clouds in the sky throughout the afternoon. At 6:30 pm a female appeared (alone) from the S, tape-recorded pre-capture. She gave type 2 calls, but was measured to be the size of type 1 or type 4 birds. She (bird 354) had a brood patch and was found to have a large ovary and enlarged follicles, with 3 or 4 follicles approximately 2mm in diameter. This female was kept overnight, as was bird ~~348~~ ~~the juvenile~~. It rained at night, but the rain ended.

July 29 The pattern of occasional Type 2 birds (mainly males giving song, then flying into the tall ponderosa pine at the campsite. The



J. Grotz  
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53.

July 29 unidentified hummingbird appeared to meet the description of a rufous hummingbird, but also there were mainly Broad-tailed Hummingbirds in the open weedy areas. A Hermit Thrush and a white-breasted Nuthatch were captured. One lone male, who followed the typical behavior pattern as described, was shot after pre-recording (bird 355). At about 12:30 pm I broke camp and headed N on Hwy 666. The clouds were coalescing into rain clouds, and it was raining by the time I got to Hannagans Meadow. I stopped at a point about halfway through to Hannagans Meadow, and heard a crossbill in song, but was unable to locate the bird immediately. Additionally, I heard intermittent crossbill song out the window. But once up into the spruce-fir at 8500+ ft. -- no crossbills, since there was little apparent conifer resource. The habitat north of the spruce-fir zone, near Alpine, Arizona, appeared good, but the ponderosa pines were perhaps less fruitful here. From Alpine I drove east into New Mexico, through a town called Luna, then south through the Gila National Forest through G wood.



J. Broth  
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journal

54.

July 29 At Silver City, at which I arrived at about 7:15, I called home to Oakland. From there I went south on 90 and slept in a desert locality. During the midpart of the day, I drove east to a ghost town of Mogollon, N.M., and past the town into the road to the mountains beyond. The areas around Luna looked good for crossbills, as it was pine savanna with good ponderosa pine crops. South of Luna, much of the national forest was lower elevation pinyon/juniper habitat. Clouds hung over the entire Plateau area, but it was clearer in 'the lowland' desert through which I travelled late in the afternoon. At Mogollon, a hummingbird feeder had attracted many hummingbirds, with mainly small green types, but also an orange bird (another Rufous Hummingbird?). A good area for Ravens all through this part of New Mexico.

July 30 At 5:30 I began driving S on Hwy 90 in New Mexico to Lordsburg, then from there to the Chiricahua Mts. By 9:30 am I had set up a net at Long Park, Elev. 9140 ft. No crossbills were encountered





J. Broth  
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July 30 anywhere along the route, and the pines did not look good. The Doug fir, however, looked tolerable in most localities, but green and possibly not attractive to most large-billed crossbill forms. The long-needled Apache pine had staminate cones only, and only a fraction had a few old, still-attached cones, and most of these were at the highest elevations. At Long Park, the clouds began to form already by 10:00 a.m. Thunder rolled across the mountaintop all late morning and afternoon. By 4:00 p.m., the thunder and lightning became extremely intense and  $\frac{1}{2}$ " hail fell for about 30 min., followed by rain which became drizzle. Rain ended finally by 6:30 p.m. The net caught male Magnificent Hummingbird twice. A small accipiter, likely a male Cooper's Hawk, attacked the decoys on one occasion.

July 31 The morning began with only some high clouds, but the trees and ground were wet. The net and decoys were set out by 5:30 a.m. and left until 8:45 a.m. No crossbill sign all morning. Some birds



J. Broth  
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56.

July 31

at Long Park were Mexican Chickadee, yellow-eyed Junco, Band-tailed Pigeon, Pygmy Nuthatch, ~~Acorn~~<sup>Hairy</sup> Woodpecker, Broad-tailed Hummingbird, Pine Siskin. The skins always elicited response from the decoys. I drove from the Chiricahua back to the Apache National Forest, and arrived there by a little past noon. The clouds were gathering over the mountains. Evidently it had rained over most desert and mountain areas in this part of Ariz./New Mexico. I drove up 666 until a few miles north of the last trapping locality, and found a road to the left (W) and drove in perhaps a mile and found a place to camp by 3:30. It then rained over the area, with thunder, lightning, and heavy downpours. I heard and saw a crossbill (Type 2 ♀?) at this locality. The road was the one to the W of 666, noted Crabtree park 4 mi. I drove in about 1 1/2 mi., the going rough even with 4WD. Here I accomplished little, but did hear one Type 2 Crossbill before the rain. The coyotes howled at night, and the area was full of deer and cattle. Much

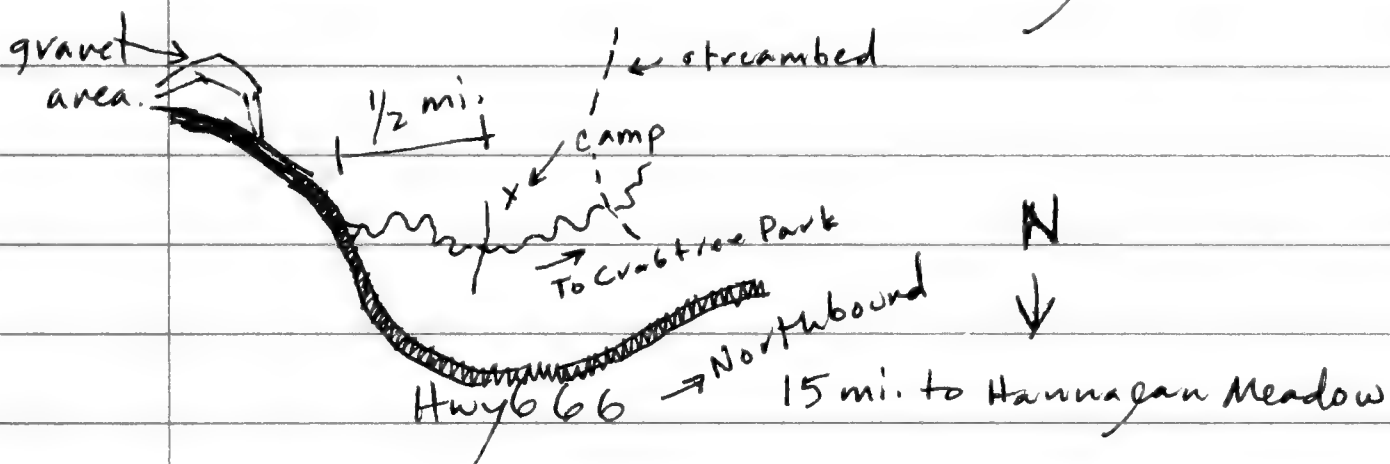


J. Groth  
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57.

of the area was very open, with scattered juniper and oak among the taller ponderosa pines, which were producing green to brown cones on many trees, and most of the larger ones.



Aug 1 The morning was overcast with grey clouds, with some stratification of clouds and cloud buildup. Crossbills were heard by about 6:30 am, with intermittent calls & song heard mainly from the NE of camp. The encounters near the camp with crossbills are recorded on tapes 56B and 57A. Before 9:00 p.m., a pair was collected, the ♀ in the net and the ♂ (357) shot with the gun. This may have been the same pair encountered earlier in the morning, who were recorded and who interacted with another male crossbill. Later, a lone ♂ was attracted to the decoys and was captured (358). I broke



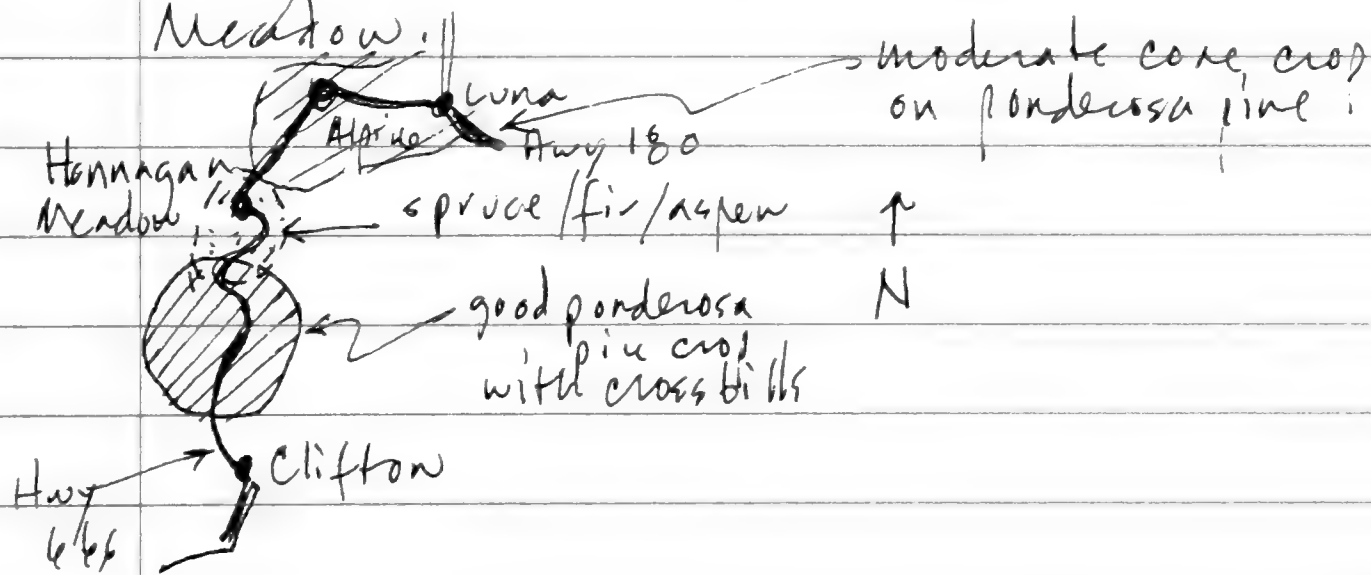
J. Groth  
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Aug 1  
(cont'd)

Camp by 9:30 because the clouds had coalesced and were beginning to drop rain. Considering that the typical pattern was for progressive worsening as the day would progress, I decided to seek drier areas for fieldwork, as little as seemed possible in the rain. I drove north on 666 to Alpine, then E on 180 to Luna. From there, I took the National Forest road (29?) north. The areas immediately around Alpine-Luna looked o.k., but not as good as the forests south of Hannagan Meadow.



Basically, the good area was on the Mogollon Rim itself.

From Luna, the road went through a beautiful mesa area, with scattered pine savannas, but few with cones. It graduated to piñon pine, then open country with sagebrush. There were many cattle. Birds of note through the region include piñon Jay





J. Groth  
1985

journal

59.

Aug 1. and Lewis Woodpecker. Also, flocks of Pine Giskin in the weeds. One I hit Hwy 60, I followed it E until 117, and took 117 north. This was a vast area of plains and mesas, with very impressive mesas as approaching Interstate 40. The lava flows to the W of 117 contained piñon/juniper/ponderosa pine. As I drove up 117 and then on 40 to Albuquerque, the thunderheads were all around, and rain was coming down on all the higher elevations. I swung N on Interstate 25 past Santa Fe, then N on 84/285 to Española, where it was becoming dark, and I called home to Oakland, Calif. From Española I took 76 to Truchas, NM. (The place where Ned Johnson had seen "lots of crossbills" early in the summer. I camped just N of Truchas on the first road north of the National Forest (Carson) sign, to the right and up the hill about 1/2 mi. It was raining, and 4WD was needed to negotiate the mud on the road. I arrived at this camp at about 10:30 pm.



J. Groth  
1985

journal

Aug 2 I arose at approximately 5:30 a.m. The morning was overcast with scattered rainclouds in all directions. I took out the cartine crossbills and got recordings of birds ♀356 and ♂358. No crossbills were evident here, although no doubt they were present earlier in the year as a fading cone crop was on the ponderosa pines in the area. Pine Siskin, Pygmy Nuthatch, Mt. Chickadee, Solitary Vireo. At about 8:30 I decided to leave the area. Rain was about to occur, and the forecast was for continued showers through the weekend. I took 76 to 3, took 3 N to the NM border. It was raining everywhere. I searched the mountains near Las Trampas, but rain & cold were bad, with wind, and no cones were on the trees here. Hwy 3 became Colorado 159, which I took N to Ft. Garland. I then drove W on 160 to South Fork, Colo., and from there took 149 to the NW. This road followed the Rio Grande river. Bordering the river were mesas, some had very sparse pine savanna with fair cone crops. Also, some spruces here had cones. When I



J. Groth  
1985

Journal

61.

Aug 2  
(cont'd)

got to the Blue Mesa area, I took a gravel road across Blue Mesa to the NW; the top of the mesa was grass/sagebrush with scattered groups of aspen/spruce and few ponderosa pines. Here the clouds began to thin out, as I was finally escaping the tropical moisture of the southern mountains. I took Hwy 50 W past Montrose, then followed Hwy 90 into the Uncompagre National Forest. Along this route, the pinyon/juniper zone met the aspen/spruce very abruptly, and I drove straight into the midpart of the forest. I turned left to go NW through the heart of the forest. The cone crops on the two (?) species of spruce looked good here, especially in the northern reaches of the plateau, and on the road to Delta, Colo., the forest became ponderosa pine savanna with only some trees in green/brown cones. I camped at the edge of this pine savanna on the road to Delta, or about 1/2 mi. S of where Cottonwood Road turns off to the NW of the main forest road. There was a thunder/lightening storm visible to the S of where I camped, but my camp remained dry. Coyotes howled here.

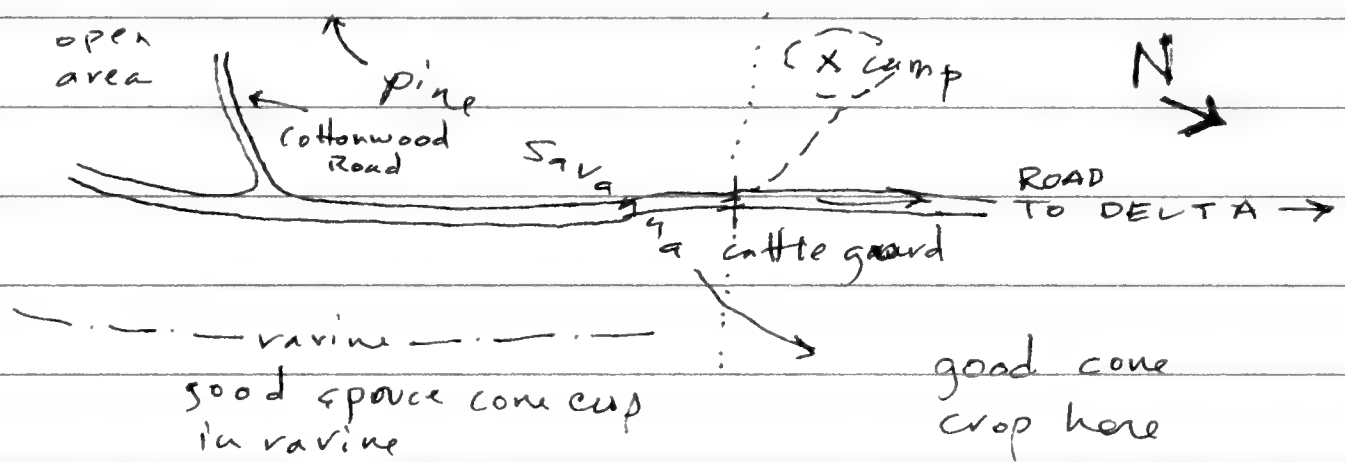


J. Grate  
1985

# Journal

62.

Aug 3 At dawn I took a walk from camp to birdwatch. The morning was mainly clear with some high and low clouds. I walked from camp to the turnoff of Cottonwood Rd



No crossbills were heard. Pine siskin, junco, mountain chickadee, common nighthawk, flicker, Bewick's wren, chipping sparrow, broad-tailed hummingbird. As it appeared that this may have proved to be a poor area for catching crossbills, I drove down Cottonwood Rd to search for other good areas. Along the streams and sides of the mesas the quince cones (species?) were in fair crop, with cones just ripening. Only a few ponderosa pines looked favorable. I took a turnoff to Lone Mesa and another turnoff to Escalante Canyon. By 8:00 am I had found a good-looking ponderosa pine savanna area where I set up a net. By 8:30 am crossbills were heard here.

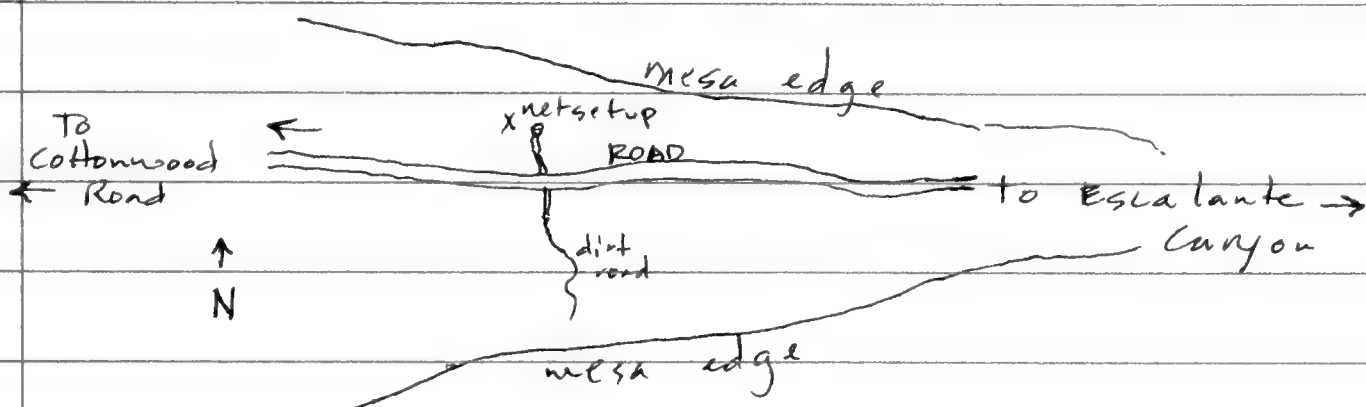




J. Brath  
1985

# Journal

63.



The crossbills turned out to be a pair of mates. They perched high in a ponderosa pine above the net. One was vocalizing, and I believe this was the one that I shot (Bird 359). The other came down close to the ground, and after recording I took a shot at it from 20 ft. with the .22, but didn't get it. He then flew to a treetop, where he called and I got good recordings. This bird sounded bilingual, with a weird, high-pitched alternate call in addition to regular Type 2 calls. This male got away. I heard no other crossbills all morning, although pine siskins flew over about every 10 min and always excited the deers. I think I heard an Evening Grosbeak once fly over, which also excited the deers. One bird could not be identified - it gave a low "hoot-hoot" call -- looked like a gray jay or pine grosbeak -- but in ponderosa pine? By afternoon I drove searching



J. Groth  
1985

Journal

64.

for better possible areas. The area that looked good from the standpoint of fruiting snwces was either on top of the plateau, which was mixed snwce/ aspen, with a few large snwces with cones at long intervals, or along streams. I chose a spot along Cottonwood Creek Road where it crosses a small stream and there was a grassy area with surrounding fruiting snwces. Here I camped.

Aug 4 At dawn I arose and set nets and decoys. No crossbills heard at this time, but Pine Siskin, Junco, Flicker, Broad-billed Hummingbird, Western Wood-pewee, swallows abundant. A lone ♀ type 2 crossbill flew in at about 8:30 a.m. and was captured. She ~~did not have~~ brood patch. (Bird 360). I stayed at this locality until about 12:30 p.m., and no other crossbill sign was evident. I decided to search for other possibilities, and drove into Delta, Colo., for gas and some supplies. From Delta, I took 92 West to the turnoff for (65) N. This road crosses Grand Mesa. Once in the National Forest, I took the turn to the right which goes past



J. Broth  
1985

Journal

65.

Colorado

Aug 4

Ward Lake and Twin Lakes. This was an area of spruce/aspen with lakes and parkland. I stopped often to look around, but the cone crop on Grand Mesa's spruces looked extremely poor. I drove down in elevation on the road to Collbran, Colo., and from there went East on the road to Silt, Colo. Along this road was mostly sagebrush and mixed scrub oak community, with some ranches with open ground. Many western and Mountain Bluebirds, as well as kestrels, were seen along this route. I ended up at Newcastle, Colo., where I took the road N from there toward Buford, Colo. This road wound gradually up in elevation, until reaching high mountain areas of spruce/aspen/ with lots of open meadow interspersed, but fewer lakes than Grand Mesa. Little Ponderosa pine transition zone in this entire part of Colorado, these being very rare trees here. I camped about halfway(?) to Buford from Newcastle in a mountain meadow, on a road noted as Game Management Area (12). It was a good, clear night, with a waning moon late, and a good view of Jupiter.



J. Groth  
1985

Journal

66.

Colorado

Aug 5. At dawn, I arose and took the decoys out and put them on top of the truck. Crossbills were heard (Type 5) at this early hour, and they excited the decoys but did not approach. Five total were seen in one tight flock, which flew to the W. I think I got some o.k. recordings on the beginning part of Tape J6657B. I then drove around for about 1/2 hour before deciding to set up at a man-made water hole near the campsite, just 1/4 mi. down the road of Game Management Area (2). Here many birds were seen, including Clark's Nutcracker, Gray Jay, Pine Grosbeak, Pine Siskins (abundant), Junco (Gray-headed, abundant), Chipping Sparrow, White Crowned Sparrow, Olive-sided Flycatcher, Western Wood-pewee, MacGillivray's Warbler, Yellow-rumped Warbler, Cassin's Finch, Red-breasted Nuthatch, Broad-tailed Hummingbird, House Wren, Robin, Hermit(?) Thrush. <sup>Also mt. Chickadee, R-c. Kinglet.</sup> A lone ♀ Type 5 Crossbill with a brood patch was captured at about 7:15 a.m., and I collected the ♂ Pine Grosbeak with the territory around the water hole. His mate and another grayish pine grosbeak remained in the area.





J. Groth  
1985

Journal

67.

Colorado

Aug 5

calling. Many of the smaller birds were captured in the one 5m net I sit up, and were generally a nuisance to always get out of the net. No other crossbills were heard until 2:22 when a lone ♂ (Type 5?) crossbill was captured. Bird activity was generally quiet after noon, and there were thunder showers between 12:00 and 2:00. It then cleared up and was sunny and breezy.



J. Grotz  
1985

Journal

68.

ABS

Aug 12 Measurements of 315 and 318:

	lw	cn	bd	du	wv	al	ll	tr	wg	
315	31.5	15.1	9.3	5.4	6.9	9.9	11.6	19.6	84.2	♀
318	34.3	15.1	9.6	5.4	7.3	9.8	12.4	19.8	90.2	♂

315 - full adult plumage, gray throat,

318 - post-juv. molt, mixed

Aug 14 Juvenile 345 found dead in cell, prepared as full skeleton. Cause of death unknown -- crop full; gall bladder enlarged; yellowish "tumor" on right pectoral muscle; much weight loss and prominent keel. Brought birds 315 and 318 outdoors for recording.

Aug 15 315 vocalized,



May 2

Sagehen Creek Field Station, elev. 6400',  
Nevada Co., Calif. Drove up here  
with Deb Groth from the Bay Area  
via Hwy 80. Arrived at the field  
station just before dark, at about  
7:30 pm (daylight savings time). or 18:30.  
At the gate, we heard the song of  
Fox Sparrow. At the house, Joe Thornton  
at that moment found a dead  
Mountain Quail on his front porch -- it  
may have hit a window. Weather  
was drizzly and breezy in the mountains,  
and snow was present in patches  
generally at +6000', thicker pack  
upward.

May 3

We stayed in the cook's quarters. We  
got up just past dawn, birds around  
the station included Stellers Jays, Junco,  
song sparrows, evening grosbeaks, pine  
siskins, red-breasted nuthatches. No  
red crossbills were heard there, but the  
noise of the waterfall is loud. Also  
singing yellow-rumped warblers, mountain  
chickadees -- nothing uncommon. We  
drove in early morning 7:00-9:00 am  
on several highways in N. Calif, as



J. Groth  
1986

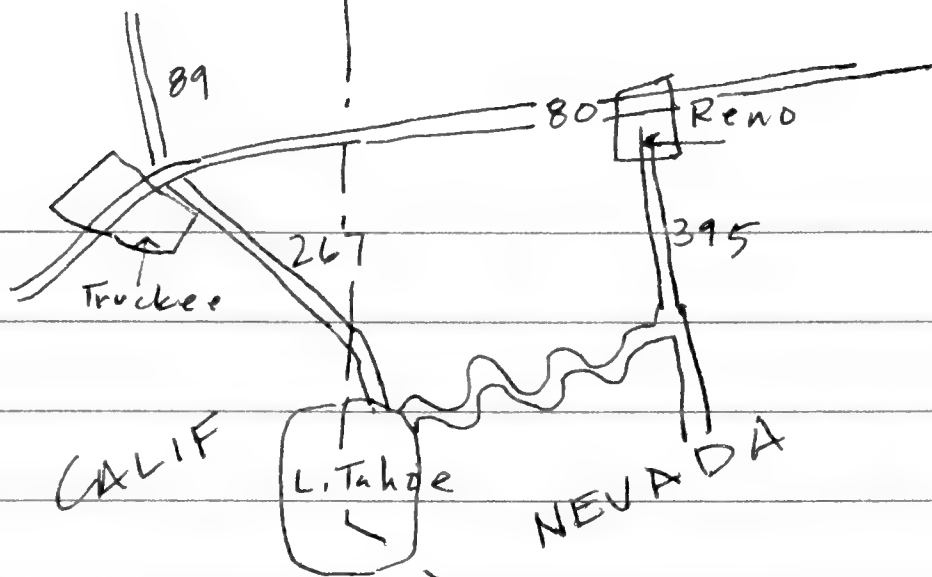
# Journal

↑  
N

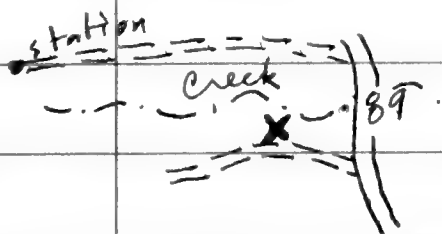
70.

May 3

on indicated map.



The weather included drizzling rain, with snow on some of the higher elevations. Along the entire route saw many Steller's Jays, and one Clark's Nutcracker along in Nevada. Did not see or look much for birds along the drive, but noted many blackbirds along the roads in lower spots. The weather was not much improving back near the station, but drizzle was fairly light. We drove in on the S side of Sycamore Creek and set up a net in spot indicated:



about 3/4 - 1 mile W. of Hwy 89.

At the net site, we noted a ♂ western tanager only a

few feet from the ground. We set up the net in the drizzle, and heard evening grosbeaks around. Later, at

about 10:00, I heard a Type 2 red crossbill call, and it excited bird 40 (duong) also a Type 2. At first there was no sign of the bird, then I heard Type 2 social excitement (toop) calls coming from





J. Guth  
1986

# Journal

71.

## Saguenay, Cont'd

May 3

a slight rise to the S. of the net. I followed the calls with the tape recorder and got a good sample of flight calls as the bird then took off to the N towards 40 and the net. Deb pointed her out in a near tree, then she swooped down and was caught in the net. - Bird 387 - a light-colored ♀ type 2 -- low bird. Between 10:00 and about 11:00 no sign of other crossbills until a pair of ♀♀ arrived, and one was immediately caught - Bird 388. The other came down -- I threw some sticks to flush her into the net, but it didn't faize her and she slowly hopped up and over to 387, who was on top of the truck. She gave an extensive series of flight calls, which was sampled for about 40 or more calls. She escaped. Between then and 2:00 pm (or 13:00) the weather was extremely variable and snow fell, occasionally large flakes came in a burst, followed by sun patches. We saw more yellow-rumped warblers, mt. chickadees, r.b. nuthatches, fox sparrows, juncos, evening grosbeaks. Two fishermen and



J Smith  
1986

Journal

72.

Sagehen, Cont'd

May 3 their dogs walked past -- they said they saw mountain lion tracks by the stream along a deer path, but we couldn't find the tracks. Found a deer skeleton -- clean and moist -- all parts just about accounted for. Robins may have been breeding -- they were common. A bluebird was heard -- species? ~~later we found~~ ~~notable~~. At approximately 15:00 we headed back to the field station -- saw many Eutamias chipmunks on the road on the way back.

May 4 we got up with dawn -- the ground was dusted with snow and it was cold. We drove to the same netsite as yesterday but there was an orange VW and Deb said she saw a tent by the stream at that spot. The road was closed ahead so we doubled back to the swampy clear spot about  $\frac{1}{2}$  way between the first net and Hwy 89. Here we saw no sign of crossbills all day. Birds of the area included Hairy woodpecker, R.B. nutcracker (breeding in a "wildlife protection tree") -- about 12 ft up -- a large



J. Booth  
1986

Journal

73.

Sagehen, cont'd

May 4 old yellow pine (Jeffrey?) trunk. Here also were mt. chickadee, y.r. warbler, juncos, fox sparrow, robin, western tanager, evening grosbeak, pine siskin, bluebird (sp?), red-tailed hawk, Steller's Jay, and an unidentified bird, brown with a more rufous tail, about the size of a mountain quail, giving a "ka-ka-ka" sound after flushing and flying a few feet -- was it a woodcock or snipe? On the way out of the tralsite, just along 89 near the junction of roads, we saw a pair of Townsend's Solitaire. At the station - saw song sparrow also. Beaver sign was obvious, noted bear scat near stream at the tralsite. Joe Thornton later said they were common in the basin, but doubted the mountain lion story of yesterday. We took the birds along, (40, 387, 388) and took a route which was erratic. The forest roads to Wetten Lake were closed c) to about 3 mi in from 59. We took 49 S from Sierraville all the way ~~from~~ to Auburn



J. Groth  
1986

Journal

74.

Sagehen, cont'd

May 4 on Hwy 80. Poor cone cross all the way, with the exception of few green ponderosa pine cones near the Nevada City area. Saw a diver in Salmon Creek along 49. It was generally a day of snow, rain, and patchy clouds in the mountains, with some clear skies in the Sacramento valley.

May 5





J. Groth  
1986

journal

75.

May 8 Corral Hollow Trip, Alameda Co., Calif.  
Claremont canyon road, to Gizzly Peak,  
Fish Ranch Rd, to Hwy 24, 680, 580.  
With Ian Taniguchi, Aron Yarns,  
Stacia Cronin, and John Vollmar.

In Claremont, saw: Turkey Vulture,  
Red-tailed Hawk, Song Sparrow, Brown Towhee,  
Bush tit, Chestnut-backed Chickadee,  
Stellar's Jay, Am. Goldfinch, Brewer's  
Blackbird, Am. Robin, English Sparrow,  
Mourning Dove, Anna's Hummingbird,  
House Finch, Wrentit,

Del Valle Regional Park, Alameda Co., Ca.  
Cliff Swallows, Yellow Billed Magpie,  
Bullock's Oriole, Crow, Starling, Mocking  
Bird, Chickadees, Red Wing Blackbirds, Cows,  
Horse, Mule Deer, Scrub Jay, Dog, Chickens,  
Sceloporus graciosus, Rana calisiana, Baron Swallow,  
King Bird, Lazuli Bunting, Western Blue Bird,  
Western Meadowlark, Rock Wren, Baby Spermophilus  
Beecheyi, Lesser Goldfinch, Sceloporus occidentalis,  
Star Loggerhead Shrike, Plain Titmouse, Acorn  
Woodpecker, Arctic Boreas, Calif. Quail, Rufous-sided  
Towhee, White Breasted Nuthatch, Orange Crown  
Warbler, Scrub Jay, Hutton's Vireo, Sylvia  
australis, Am. Kestrel, Rock Dove, Golden Eagle,  
Raven,

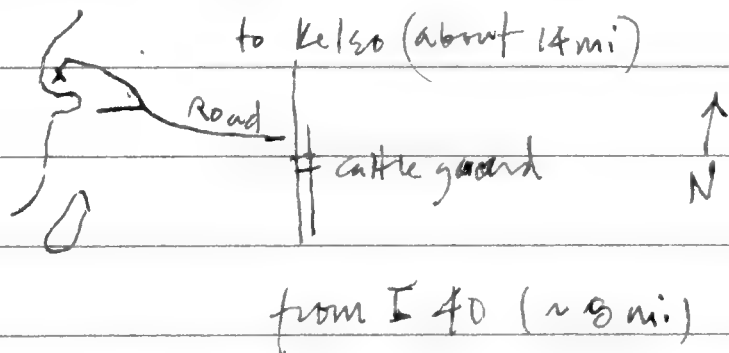


J. Groth  
1986

Journal

76.

May 22 Western Trip, Mojave Desert, San Bernardino Co., Calif. Began trip to SW. US today, with some people on the traditional ZOOLOGY 107 "Desert Trip", as follows:  
David Ribble, Aron Yarmo, Ian Taiguichi, Laura Cunningham, Debra Wadford and "~~Harley~~<sup>Gretchen</sup>", and "Stephanie"; ~~and~~ we left Bay area at 6:33 am, drove down I580 to I5 to 46 to 99 to 58 to I40 at Bakersfield. Drove E on I40 to Kelso Dunes exit, then N 10 miles to the Donner Camp area, and we camped about 1/4 mi from the Camp on the other side of the small crest.



We camped at a place named Snake Spring. Vegetation: mixed cholla, creosote, Joshua trees, and other shrubs & cactus.

May 23 Donner's Camp, 14 mi. S. Kelso, San Bernardino Co., elev. 3900 ft., Calif.  
Spent the day exploring the area. Collected a black-throated sparrow in mid-morning. The following is a list of birds for the area, including species



J. Groth  
1986

Journal

77.

Dorney's Camp, 14 mi. S. Kelso, elev. 3900 ft.,  
San Bernardino Co., Calif.

May 23

identified by others on the trip:

Turkey Vulture, Red-tailed Hawk, Cooper's Hawk  
White-throated Swift, Black-chinned  
Hummingbird <sup>on nest</sup> Anna's Hummingbird,  
Ash-throated Flycatcher, Scott's Oriole,  
Black-chinned sparrow, Black-throated  
sparrow, Canyon Wren, Bewick's Wren,  
Campbell's Quail (with young), Loppehead  
Shrike, Mockingbird <sup>to Cactus</sup> ~~to Cactus~~ Thrasher,  
Raven, Wilson's Warbler, Poorwill,  
Western Tanager, Hermit Thrush (young? ...  
three yellow-gaped birds caught in mist  
net), Blue-gray Gnatcatcher, Cactus  
Wren, Scrub Jay,

A small pool of water was found  
where we camped. Also, other wildlife  
included Red-spotted toads (w/ tadpoles  
in a small pool), Dipodomys sp.,  
Peromyscus sp., Desert woodrat  
(these last three spp. caught in mist  
traps by David Ribble), a Chuckwalla  
caught on top of the hill by Aaron Yarno,  
some uta, some Sceloporus regis,  
lots of Cnemidophorus in the desert.  
A snake was seen, but not identified  
and no other snakes were encountered  
here.



J Groth  
1986

# Journal

78.

## Kelso Dunes

24 May Laura Cunningham said she noted some Horned Larks here. Also, Black-throated Sparrow.

Later, at about 9:30 am, I drove to Flagstaff, AZ via I 40. Here I ~~examined~~ looked for possible red crossbill areas, but the cone crop was very poor here. The road to the top of the mountain (S.F. Peaks) was closed about 6 mi. off of Hwy 180. I decided to head south to the Mogollon Rim where I found a ~~campsite~~ campsite 3 mi. N of Strawberry, Az.

## 25 May Mogollon Rim, Arizona

I set out the net at the campsite, but did not notice any crossbills. Just Rufous-sided Towhees, Western Bluebirds, Olive-sided Flycatchers. I then headed E on the Rim Road, and followed this until 18 mi. W of Show Low, where I cut N to Hwy 260. I did encounter a pair of crossbills (see catalog) along the route. The habitat throughout was of ponderosa pine, with very poor cone crop. The "worst" areas were along between 260 and 260.





J. Groth  
1986

# Journal

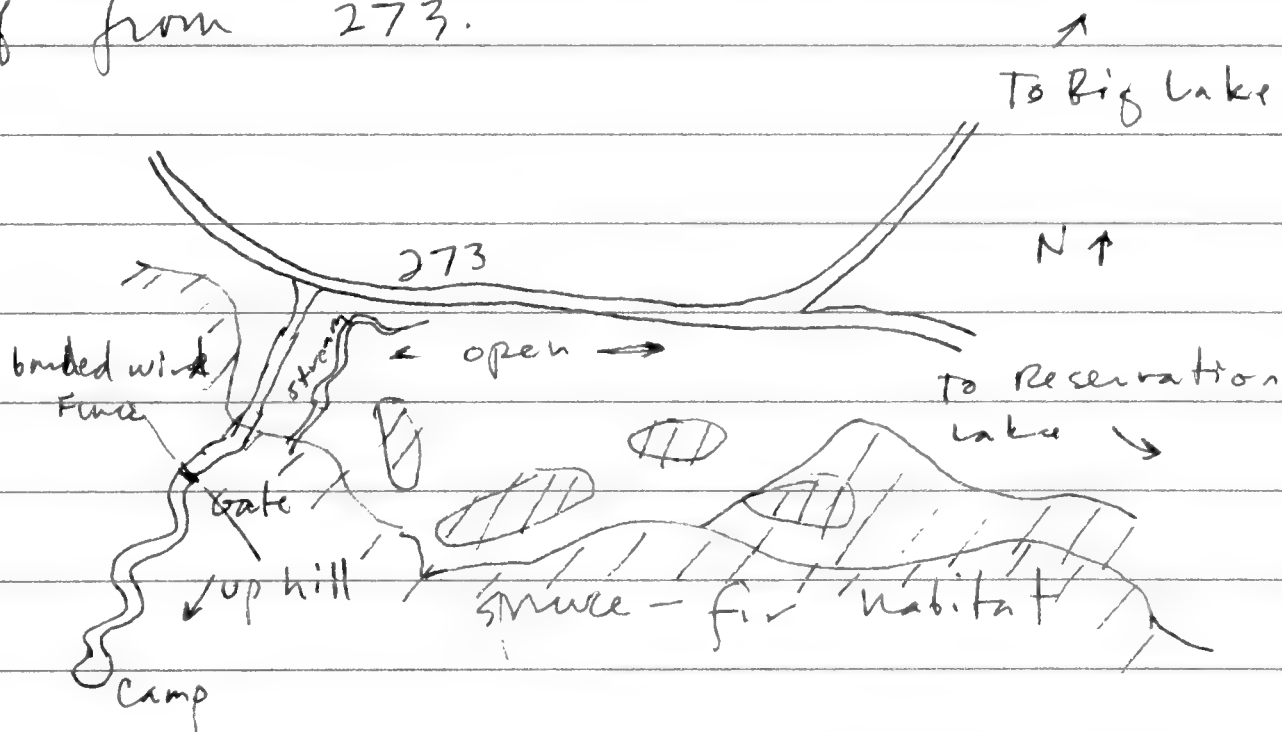
79.

Mogollon Rim, Arizona.

25 May. Almost no bird life at all along much of the route. I cruised through Show Low and took 260 to the 273 cut-off to the White Mountains, where I camped.

26 May White Mountains of Arizona

I camped about 3 mi. N of the point where the road to Reservation Lake Branches off from 273.



At the camp, 10 red crossbills were encountered at about 7:00 am -- calls of the flock were tape recorded on JGG 64B near the end. Sounded like Type 2.

They did not come down to bird 387 (decoy) but remained in the tops of the trees.

By 9:00 I started to move out onto 273. I took a side track on



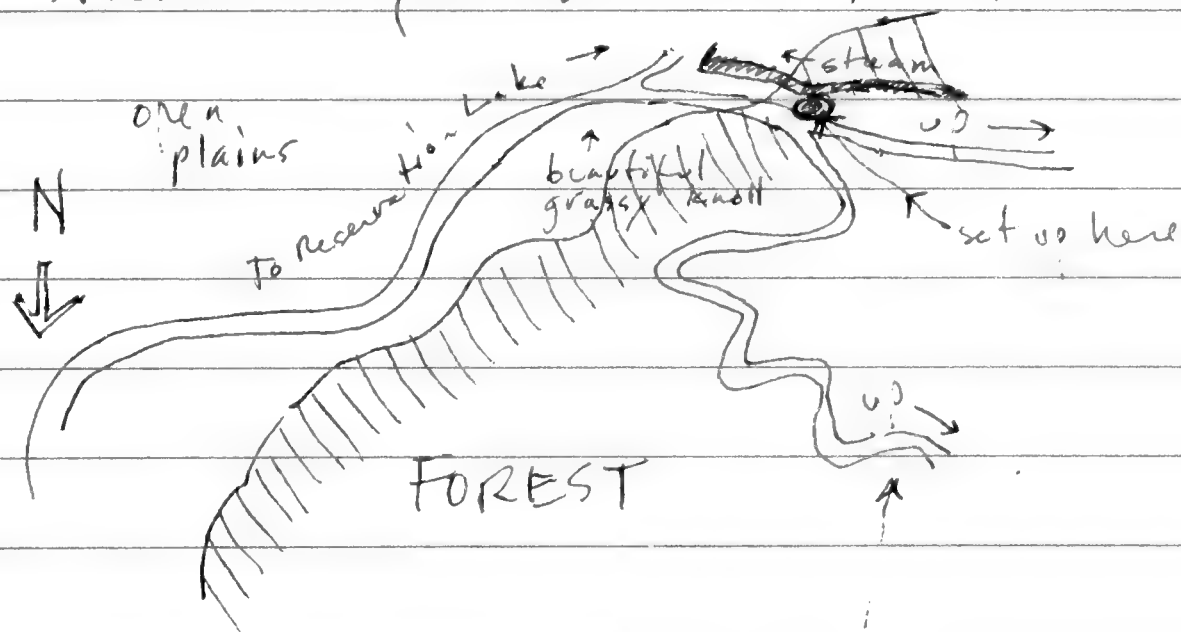
J. Guth  
1986

Journal

80.

26 May

White Mountains of Arizona  
the road to Reservation Lake. This road wound through the very open grassy plain, with sparse ponderosa pines, spruces & firs, and rarer Limber pines along the edges. The limber pine had some green cones on most trees. The spruces & ponderosa pines were very sparse of cones -- most had nothing at all. I stopped on a side branch off the road to Reservation Lake and set up the net along a stream for about 3-4 hours.



Before this, I drove up this road but a log prevented further exploration. I heard no crossbills here.

other birds noted in this area:

Cowbird, Brewer's Blackbird, W. Tanager  
R-C. Kinglet (abundant & singing) Townsend's  
Solitaire, Robin (abundant), W. Wood  
Pewee, Siskin, a Horned Lark,



J. Groth  
1986

journal

81.

White Mountains, Arizona

26 May

yellow-rumped warbler (common & singing)

Hairy Woodpecker, Flicker, Raven

(uncommon) Stellers Jay, Coot --

(seen on the lakes)

no pine grosbeaks, Clark's nutcrackers  
pinyon jays, Gray jays !! where  
are these species? also, no hawks.

I drove on 273 until the cut-off  
for Big Lake, and continued straight  
on the road, which led in about  
17 mi. to Alpine, Arizona. From  
there, I took AZ 666 S to  
the same Greenlee Co. site as last  
year (1985) where I found the breeding  
colonization. The cone crop was  
extremely poor between Big Lake and  
Alpine, also poor from Alpine to  
Hanagan Meadow -- essentially poor  
on ponderosa pine. After the  
descent from Hanagan Meadow, the  
cone crop improved. The ponderosa  
pine here had a fair new green  
cone crop, as the remains of  
last year's moderate crop were seen,  
half on / half off the trees. About  
14 mi. S. of Hanagan Meadow a  
♀ wild Turkey and babies were seen

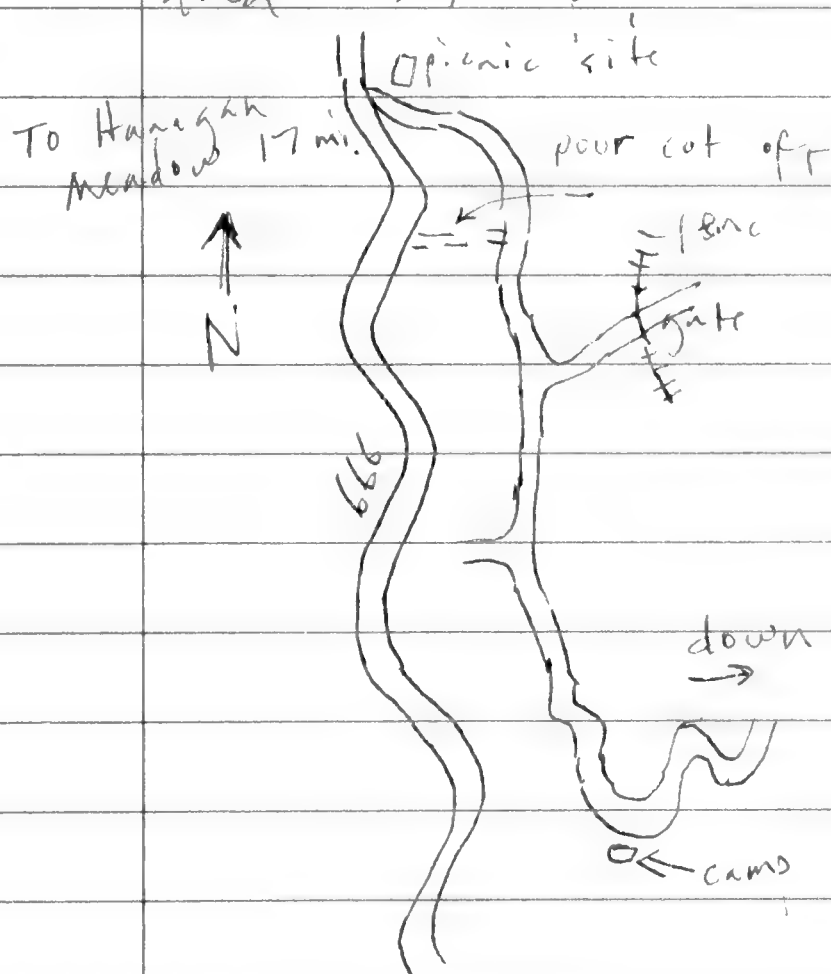


16th

Journal

82.

May 26 White Mountains to Greenlee County, Arizona  
on highway 666. Here also, crow's  
and band-tailed pigeons were seen.  
Western Tanagers were the most common  
singing bird. I drove down  
to the dirt road paralleling 666 to  
the E, and found a place to camp  
and set up



The weather leaving the higher mountains  
was getting cloudy in late afternoon. At  
the camp, it was clear but windy,  
with a moderate N wind. No  
crossbills encountered since early morning.

May 27 Had the net set up since 5:00 am.  
No crossbills were heard in the early  
morning. Acorn woodpeckers-, red-shafted





J. Groth  
1986

Journal

83.

Greenlee County, Arizona

27 May flickers, house wren, turkey vulture,  
raven, bluebirds (sp?, heard overhead)  
pine siskin, and for mammals: gray,  
tufted-eared squirrels (species) and a  
black bear was seen after I heard him  
pushing leaves aside with his forepaws,  
apparently foraging on acorns.

A group of 5 red crossbills were  
attracted to the decoy (r.c. #387) at about  
9:00 am. The group was divided into  
a group of 3 ♂♂ and a ♂/♀ pair.  
The three males came down & were  
caught, but then ♂ #391 escaped from  
my hand. Later he was recorded in  
the flight call on tape 65A. The  
other two birds then came down &  
were caught. ♂ #393 had an injury  
on his left wing (see study skin)  
from an unknown cause. No other  
crossbills were heard until ~~1:00~~ 1:00  
when I decided to pack up and go  
down 666 to the Chiricahua. By  
this time, the weather had turned  
from clear/breezy to cloudy, drizzly  
and blowing.

The drive down 666 went  
as follows: through the rest of



J. G. G. G.  
1986

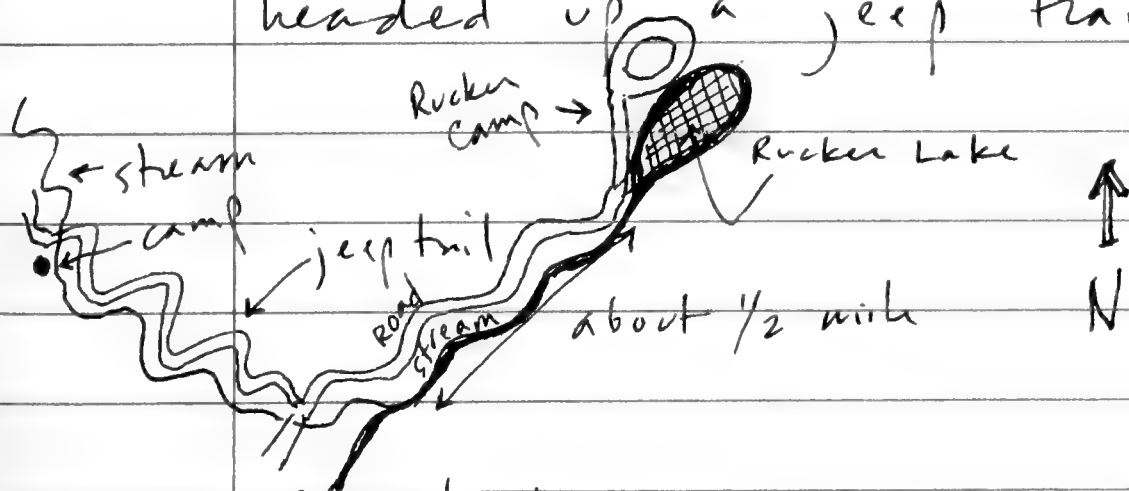
Journal

84.

27 May the mountainous area the cone crop appeared good for the next late summer breeding session (on ponderosa pine)-- about as good as last year in this area. Crossbills were not heard along the route.

It was hot & sunny down in the desert between Clifton and Willcox, Arizona. I headed S on 666 to about 10 mi. past Pearce, Arizona where I turned E to the Chiricahuas (toward Rucker Canyon). Clouds were above the higher elevations of the Chiricahuas.

I drove all the way to Rucker Lake where I turned around. Then I headed up a jeep trail about 1 mile.



This trail was headed toward the Monte Vista lookout, and went through a canyon with a mostly-dry stream. I found a campsite just at the point where the stream crossed the road.



J. Groth  
1986

Journal

85.

Chiricahua Mountains, Cochise Co., Arizona

At the campsite, birds heard that evening included Bridled Titmouse, Painted Redstart, Black-headed Grosbeak, Solitary Vireo (gray form), Whip-poor-will, Robin, White-breasted Nuthatch.

Along the way, along the road to Rocky Canyon, I saw a curve-billed thrasher, id'd by the bill curvature distinction.

28 May Got up at sunrise and set up a mist net over a few pools of water in the stream next to camp. It was a sunny, cool, pleasant morning. No crossbills were encountered all morning or early afternoon. I spent some time tape recording and making specimens of birds #392, 393, 394. (All recorded on JGG 65A). Other birds around camp included abundant and vocal Mexican Jays [this species was first seen by me on 666 N of Clifton (about 12 miles). Also Stickland's Woodpecker, Painted Redstarts and Bridled Titmouse (these last two were caught in the mist net and photographed). I tape recorded a



J. Guth  
1986

Journal

86.

28 May Chiricahua Mts., Cochise Co., Arizona  
short cut of a solitary vireo (on mid tape 65A). Robin was common. A kind of fox squirrel, quite bright rusty color, was seen in the canyon I was camped in. Some kind of oriole (hooded or streak-backed??) was seen & heard (at least two birds) & one individual was photographed as it foraged from low branches of Chihuahuan pine. This individual was yellow, with a black throat & had noticeable wing bars. I did not consider the back markings at the time, but this may come out with the one photograph, which was of the back.

By late morning gray clouds were forming over the higher elevations here, and I heard thunder.

Acorn woodpeckers were common around the camp. Some kind of kingbird was heard but not identified.

During the afternoon hours I prepared the specimens of birds (RC #'s) 392, 393, 394. That evening the whip-poor-wills became very active right around the camp. Some kind of nighthawk was also





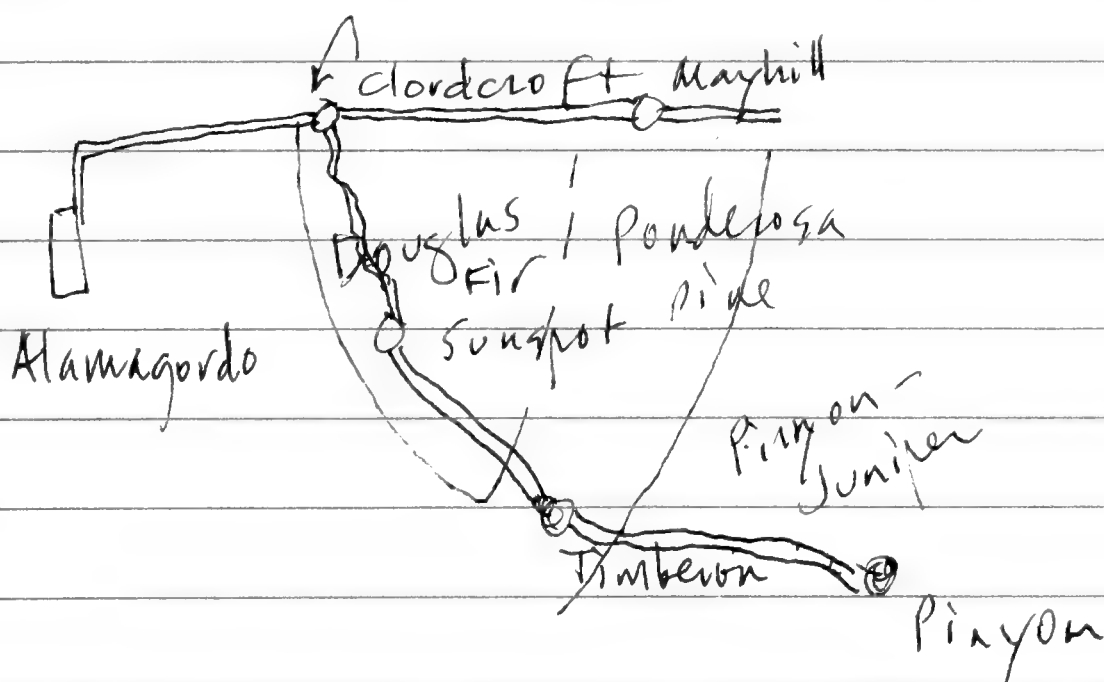
1. Groth  
1986

Journal

87.

Chiricahua Mts., Cochise Co., Arizona  
28 May heard. No owls were noted.

29 May By late morning, around 8:00 am.,  
I decided to head toward the Sacramento  
Mountains of New Mexico. I drove  
from Rucker Canyon to Hwy 80, to  
I 10, then E to Alamogordo, NM.  
From there (and this was mid-afternoon)  
I drove up to Cloudcroft, NM and  
then made a full circuit around  
the mountains.



The forest on the higher elev's was of  
almost pure Douglas Fir, with some  
Limber pine and some Ponderosa pine.  
Cones were rare on all tree species.  
Timberon was at the transition zone,  
being on a plateau with much  
Ponderosa pine, also grading into pinyon  
juniper.

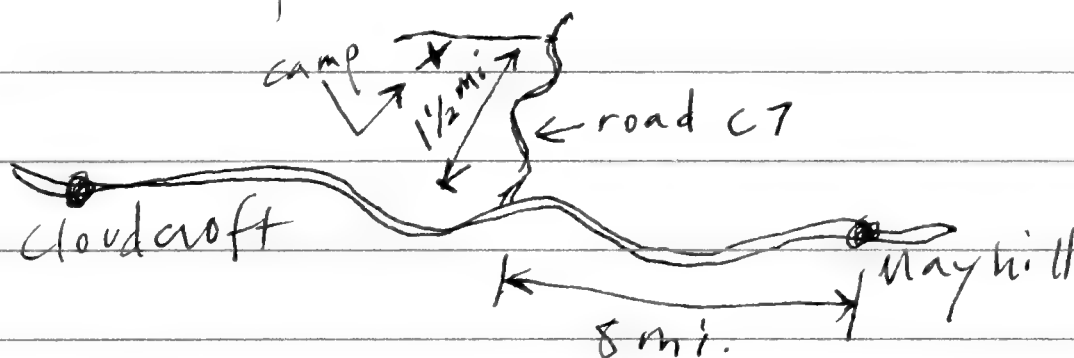


J. Groth  
1986

Journal

88.

29 May By the mid-afternoon, dark clouds were forming over the higher elevations. A storm was brewing, and it seemed to follow me as I drove E to Pinyon. Later, as I began to drive W again, I drove straight through the storm. I ended up camping 8 mi. W of Mayhill on road C7 or 99, in a place as follows:



the camp was on a "driveway"-type road into a little canyon, with a white house trailer  $\frac{1}{4}$  mi. from the main road. Here, the canyon floor was grassy, surrounded by thinned (logged) firs and pines. Two elk were grazing near the trailer as I drove up.

30 May. I set up the net on the hill next to the camp. It was a cool, foggy / cloudy morning, with a possible rain shower later. No signs



260th  
1986

# Journal

89

30 May

of crossbills, and not surprising considering the cone situation. No sickness either. Common birds included Grey-headed Junco (a nest found under a log with 10-day old young), Robin, House Finch, Stellers Jay, Mountain Chickadee, Ruby-crowned Kinglet.

I then decided to pack up by 8:15. From the camp I went back down to Hwy 70, then to 54 to 380, then up I-25 to Albuquerque. Then I headed W on 44 to 4 to explore the Jemez Mountains.

The drive on 4 to Jemez Springs was through a river valley -- very beautiful with red rock mesas and pueblos. Here the Ponderosa pine became common at higher elevations but with only sparse green cones here.

At the higher elevations, cones were green and half size on the ponderosa pine. Douglas fir had a weak green crop on the S sides of the mountains only. On the W side of the Jemez Mts,



J. Groth  
1986

journal

90.

as seen from Hwy 126 from La Cueva to Cuba. Here was the beautiful ponderosa pine savanna as I had imagined would be ideal for type 2 crossbills. However, the trees were bare & not even flowering very strongly. The spruces along the bottoms of the canyons were bare of cones - mostly Douglas fir, but also Engelmann and Blue. No crossbills were encountered on several stops, although the weather became increasingly cloudy, blowing, and rainy. Finally, at the very high elevations on the W side, the weather turned to blowing hail with snow flakes. The road down toward Cuba was very poor, just dirt and very bumpy. ~~Exotic~~ Along this route, the birds encountered were Flickers, Robins, Pine Siskins, T. solitaires. At the very high ridge on the S side, there were Evening Grosbeaks, Black-headed Grosbeaks, Pine Siskins, Hairy Woodpeckers, W. Woodpeckers, Y-r. Warblers. From Cuba, I drove N on 96 to Gallup, then E on 84 to Espanola. Here the road passed mainly through lower elevations but some ponderosa pine were



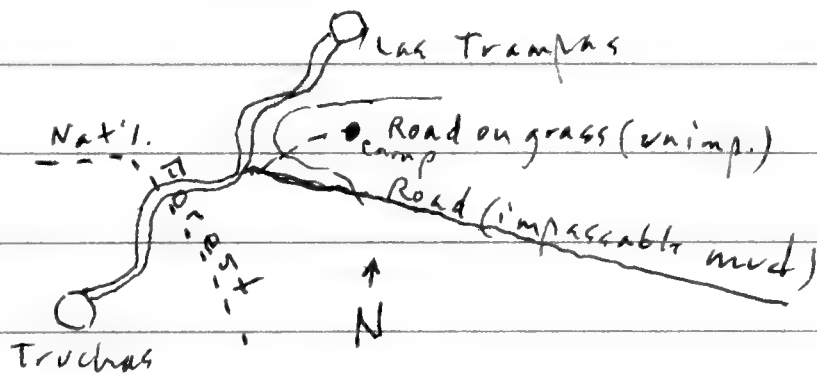


J. Guth  
1986

# Journal

91.

mixed with dry piñon juniper habitat. It drizzled rain as I drove through this area, stopping several times to inspect trees and search for crossbills. At Escamela, which I reached by evening, I turned E on Hwy 76 toward Truchas. The weather was not bad in these evening hours, but dark clouds & storms were evident over all of the higher elevations. I drove about 6 mi. N from Truchas to a road which was not marked and turned E. Locality was indicated



directly on a topo map. This area was a foothills-type area of 90% ponderosa pine, 10% piñon juniper. Cones were of the old, last-year's variety, still tan but empty and half-fallen off the trees. This particular area looks like it will have a moderate to weak crop of ponderosa pine cones this fall. Night hawks were present at the site that evening.



J. Grotz  
1986

Journal

92.

31 May I had set up a mist net for crossbills the previous evening, and stretched it out with 367 and 390 for decoys at first light. No crossbills were encountered during the entire morning, and I dismantled the net and left the area by 12:00. Birds here were Townsend's Solitaires, Rufous-sided Towhees, - Brown-headed Nuthatch, Hairy Woodpecker, Mountain Chickadee among others. The weather remained surprisingly good here, but it was obvious that this was a mere 3-4 square mile sunny patch that seemed to last most of the morning, as the clouds merely built up rather than pass over. The rain drifted-in on occasion by mid-morning.

I then left the area and drove up Hwy 76 to look for crossbills elsewhere. This highway (76) merged with Hwy 3 (towards Las Vegas, NM) and I followed it E for about 8 miles. Here I had planned to search the higher slopes of the Sangre de Cristo range. The road was the one headed N to Black Lake, over a pass of about 11,000 feet.



J. Groth  
1986

Journal

93.

31 May

The road went up the valley. Along the stream were some spruces, but no cones (one or two in a thousand). At the higher slopes which were visible, the spruces were young, newly-planted after an apparent fire. No cones--no crossbills. And the weather was pouring rain, turning to hail & snow slush. The road was impassable due to a snow drift at about 10,800 feet. The road was clogging mud and getting impassable. I turned back down to get on Hwy 3. It was pouring rain. I drove E to Mora and Wagon mound. Here the eastern slopes & foothills of the mountain mass had ponderosa pines in good abundance of green cones. This fall the Eastern slopes will provide more suitable habitat for crossbills than the W side. I stopped to look and check at several points between Tres Ritos & Mora. Even all the way E to Ocate the ponderosa pine stretched out in savanna fashion for miles, but unfortunately mostly on private lands used for ranches.



J. G. G. G.  
1986

# Journal

94.

Colorado  
and grazing. The rain was weaker on the lower slopes, but the weather was stormy on the higher ( $>7000$  ft) slopes. This area could provide good type 2 breeding habitat this Fall through spring of 1986/1987.

From Ocate I chose to try Colorado, since it was obvious that crossbills would be very difficult to find throughout New Mexico.

From Ocate I drove E to Wagon Mound along a newly-travelled highway. This country was classic short-grass prairie, with a few rocky outcrops and mesas. A few herds of cattle were seen grazing here, as well as about 20 pronghorn antelope.

From Wagon Mound I drove N on I25 to Walsenburg, Colorado. Along this route, through short-grass prairie, range, farm, and vineyard areas. The few of the Spanish Peaks was truly astounding from the freeway. These mountains have little or sparse surrounding foothills, and little if any apparent access. I drove S on Highways 160 and 12 to Cochran Pass





J. Groth  
1986

journal

95.

Colorado, cont'd

31 May in the San Isabel Natl Forest, where I camped for the night. The weather was cold, down to freezing, and there were patches of snow here. It was getting dark. Thunder was heard in the distance, but there were clear skies overhead. ~~Western~~ <sup>mountain</sup> Bluebirds were heard calling even at this late hour (dusk).

I camped in aspen/spruce/fir along the edge of a clearing at Cochaca Pass.

During the night, rain began to fall, with thunder and lightening.

1 June The early morning down chorus included Mountain Bluebirds, Ruby-crowned Kinglets and yellow-rumped warblers. The weather was heavy fog and drizzling rain. The wind was gusting and heavy here. I packed-up and left immediately, over the nearly impassable mud of the road E to Guirane, ~~the~~ Colorado. I drove back to the N on Hwy 12 to 160 to Walsenburg, then N on 25 to the Colorado City on Hwy 165. I decided to drive NW through the National Forest here, in hopes of finding



J. Broth  
1986

Journal

96.

Colorado, Cont'd

1 June good-looking crossbill habitat. Highway 165  
wove through mountain valleys, with  
generally steep slopes with spruce/aspen,  
and no cones on the trees. At  
165 I turned down 67 to Florence, Colo.,  
[this went downhill through a mountain valley  
with a stream]. At Florence I headed  
NW to Canon City, then continued NW  
to Guffey. Just beyond Guffey the  
San Isabel National Forest had its boundary.  
Much of the land here was very  
dry intermountain prairie with a  
ponderosa pine savanna, mixed with rare  
pinons and juniper. It was a very open  
habitat-type. The cones here were  
fairly good on the ponderosa pine, but  
very young and green, especially in  
the higher areas. This area did not  
seem appropriate for crossbills at this time.  
N of Guffey, along the road near the  
Eleven Mile Canyon Reservoir, the pines  
gave way to a pure, high elevation  
intermountain prairie. Horned larks were  
abundant here. I took the road N to  
Glentworth and got on westbound Hwy 24/285  
to Johnson Village, at the foot of  
Mounts Princeton, Harvard, and Yale.



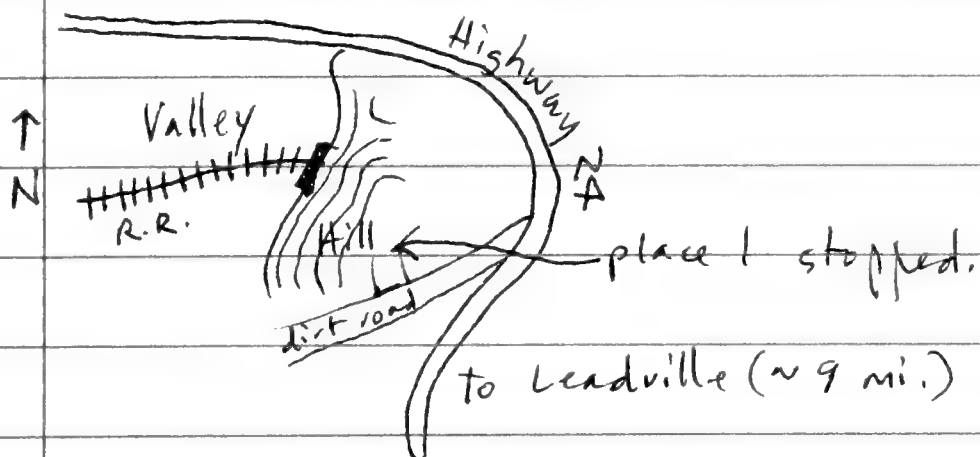
J. Groth  
1986

journal

97.

Colorado, cont'd

1 June Here I drove N from Johnson Village to Leadville on Highway 24. Just a few miles S of Leadville I noticed a change in the habitat to become a thicker forest of lodgepole pine with an apparently good ~~good~~ cone crop. I drove through Leadville, then N about 2 miles. I inspected the forest here, which was of nearly pure lodgepole and scrubby piñon/juniper along the river valley at the railroad tracks. The cone crop looked good, but I heard no crossbills around. I then drove almost all the way up to Tennessee Pass and stopped at the place where the railroad tracks come out of a tunnel.



I stayed here for about 1 1/2 hours, with the decoys on top of the truck. At one point, a type 5 Crossbill flew over and excited the decoys (#'s 387, 390) but the wild bird did not stop. Later, I heard again the calls of a type 5 bird,



J. Groth  
1986

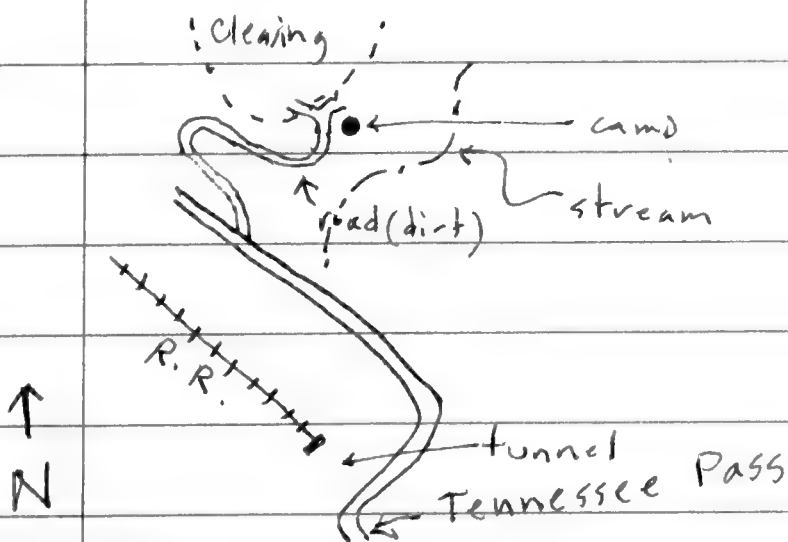
journal

98.

and I may have some recordings of it on tape 65B.

I then decided to more fully explore the area for good localities to start the expected field activity. The weather was poor, however, with blowing wind and rain. I searched several areas around the Tennessee Pass area for possible camps. One was an area along the N escarpment of the river valley, along a road just S of a trailer park, all S of Tennessee Valley yet in the bounds of the Nat'l Forest. Here were scrubby to mid-sized lodgepole pine (pine stand), but I heard no crossbills.

I then traveled N on Hwy 24, over Tennessee Pass, and found another road to explore. This was just N of Tennessee Pass, next to a red house and Christmas tree farm, as indicated:







J Groth  
1986

journal

99.

1 mi. N Tennessee Pass, elev. 10,400 ft.,  
Eagle Co., Colorado

1 June I chose to camp on the S end of a clearing (pine/spruce savanna habitat) just above a stream. No crossbills were heard that evening.

2 June At dawn a lone type 5 crossbill visited the camp, but showed little interest in the two type 2 decoys (#'s 387 & 390). Later, another type 5 bird came on the scene, and I got recordings including toos -- then made a playback loop on cassette using this material. When a lone type 5 male came around later, I used this loop and caught the male.

Later, I prepared bird 390 as a specimen.

By noon it was blowing and rainy so I decided to dismantle the net and move on. Just before I left the area, a pair of type 5 birds arrived on the scene. As I scrambled to set up the net, they flew on.

This locality was of lodgepole pine/spruce forest, with old dry cones on many of the mature spruces and a very good crop of lodgepole cones.



J. Broth  
1986

Journal

100.

2 June

Birds of the area included: saw-whet owl, Raven, Hermit Thrush, Ruby-crowned Kinglet, Robin, Stellers Jay, Gray Jay, Williamson's Sapsucker, Red-breasted Nuthatch, Pine Grosbeak, Mountain Chickadee.

I decided to try the Buford, Colorado area [15 mi. S of Buford in the white River National Forest] to see if crossbills would be more abundant.

I drove on 24 to I 70, then W until New Castle. From there, I drove N on the forest road to the old site I found birds last year. Snow was still heavy in deep places as I got into the aspen/spruce areas above 9500 feet. When I got to my old campsite, the road was closed due to snow, precisely at that spot ("wildlife management unit #23") so I could not camp there. Weather looked bad, with thunderheads all around. I decided to turn back to Leadville, Colorado. I drove back and camped at the same place as last night -- by the time I arrived it was about 3 hours past dark. Weather was clearing by this time.



J. Groth  
1986

Journal

101.

3 June

I set up the net at dawn. Weather was fairly good with some clouds, but generally increasing cloudiness. No sign of crossbills all morning. By 10:00, I decided to walk around blasting the playback loop of type 5 calls. I got a response from the N part of the clearing, but no bird flew to greet me. It was then that I discovered the nest of a crossbill.

I went back to get equipment: tape recorders, net + poles, 395 for a decoy [I figured he was probably the mate of the bird on the nest], camera. Extensive recordings were made on J6665B of the ♀'s begging calls -- she was most vigorous when responding to weak flight calls of 395.

I threw a stick at the nest to flush her, hoping then she would come down & get caught in the net. She flew to a nearby spruce and gave toos and flight calls. She then neared 395, but flew back onto the nest. I again flushed her, and she flew to a different nearby spruce. There appeared to be no way she would come down



J. Groth  
1986

Journal

102.

Colorado, cont'd.

3 June

to the net. I decided to get the shotgun and just shoot here. By the time I got back to the nest area with the gun, she was gone -- apparently had deserted the nest for good.

The nest was at 10,500 feet elevation, about 40 feet up on a S-facing branch of a lodgepole pine, about 5 feet from the trunk and 10 feet from the top of the tree. My guess is that there was a clutch (full) of eggs but no babies -- the ♀ must have been incubating to hold so tight, as previously.

By 3:00 I packed up all the gear to just drive and explore the Leadville area while the rain was falling. I drove S on 24 into town, then 2 mi S. of Leadville I took Colorado 300 west into the hills. Here it did not look so good, at least where I explored. The lodgepole here was smaller, less cones.

I then drove N through Leadville and then on Hwy 91 toward Climax, Colorado. The valley here was mostly grass rather than lodgepole (at least for the first 6 miles). I decided then to go back to the Tennessee Pass area.





J. Groth  
1986

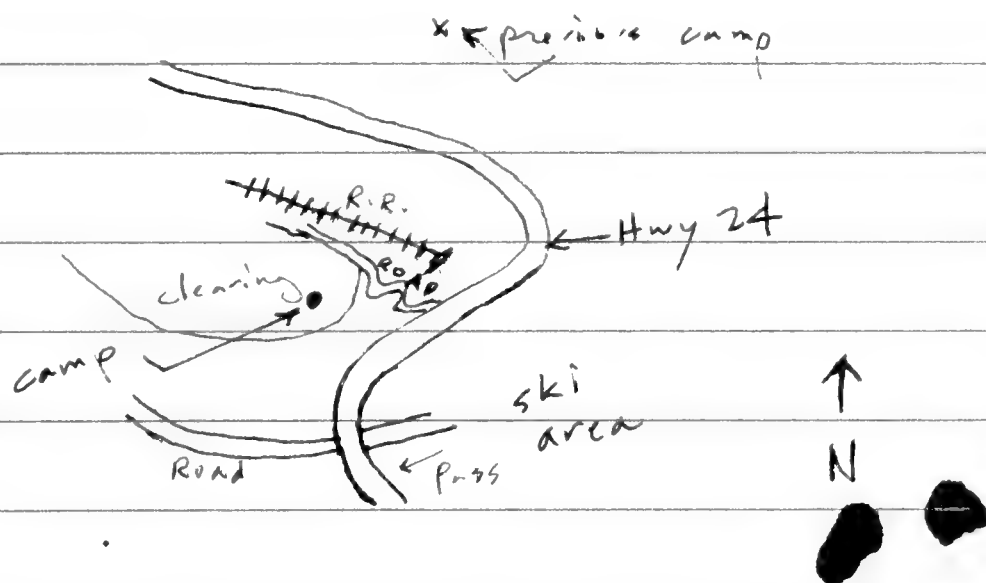
# journal

103.

3 June

I got to Tennessee Pass by around 4 or 5:00. Weather was overcast, drizzly. I searched around, then went to the place where the railroad tunnel was. Here a lone type 5 crossbill flew in in response to playback blasting, but the bird flew right over.

I decided to camp near this area, and found a place at the top of a clearing just here, at the N side of Tennessee Pass:



4 June

I got up at dawn. Same birds here as at the previous camp, but including Mountain Bluebirds and white-crowned ~~fox~~ sparrows. also Wilson's warblers.

At around 5:30 I caught a lone male type 5 bird (#396) -- my guess a breeder with a nest someplace right here. Later, by around 6:30 I caught a flock of four (birds 397-400) which were composed of



J Guth  
1986

Journal

104.

Tennessee Pass, elev. 10,400 ft., Eagle Co.,  
Colorado

4 June three type 5 birds and one type 2 bird (#~~399~~ 400 is the type 2). I had to shoot the two ♀♀ in the flock with the .22 as it seemed I might not get them otherwise. Bird 399, (the type 5 ♂) was first to be captured, and the ♀ #397 seemed to be most attached to him -- I shot her as she sat in the tree near him, calling.

I got good recordings of all three of the new captive ♂♂ (#'s 396, 399, 400) and then skinned all 5 new birds as specimens.

The weather became increasingly cloudy and stormy, so that by noon it was intermittent rain, drizzle, and some pea-sized hail.

At about 1:30 pm a pair of type 5 birds flew in and were captured. The ♂ was caught first, then the ♀ sat in a low nearby spruce giving weak flight calls. I recorded her, then was going to shoot her, but she then flew to the net where her mate remained struggling. This pair was numbered 401 (the ♂) and 402 (the ♀).

After these birds were captured, the



J. Groth  
1986

Tennessee Pass, elev. 10,400 ft., Eagle Co.,  
Colorado

4 June rain became more of a downpour, with some hail. I left the birds out, with the net set up -- and it rained nearly constantly for one hour as I sat in the truck writing field notes.

No other crossbills were encountered today. Eventually, all of the crossbills captured today were recorded, killed, and saved for specimens.

I drove into Leadville (in the pouring rain), ate dinner at a Pizza Hut, and called home to Albany, Calif.

5 June After a clear night, I set up the net in a slightly different part of the Tennessee Pass area. Around 6:30 am. a lone ♀ was attracted to the decoys, bird 395 (type 5 ♂) called first, loudest, and most vigorously -- she <sup>the wild bird</sup> was also Type 5.

I got tape recordings of her flight calls and also alarm calls (in response to gray jays around the camp. This ♀ made a flight away, as if to take off. I lured her back with the playback tape of type 5 calls/toops, and she came back and sat in the top of the tree the net was around. She



J. Groth  
1986

journal

106

Tennessee Pass, elev. 10,400 ft., Eagle Co.,  
Colorado

5 June appeared that she would go down no further, so I shot her. She was bird #403, and had a fatty, active brood patch. Could she possibly be the mate of either birds 395 or 396 -- the lone breeding males?

Later in the morning, while the sun was still shining, bird 387 (the type 2 ♀ decoy) became very excited, calling loudly. A pair of type 2 males then arrived from the N. Some recordings were made pre capture, mostly of bird 404. These two males were both caught in the net and numbered 404 and 405. Later, both vocalized in captivity and were prepared as specimens.

By noon the clouds had built to thunderheads and rainclouds. Drizzle came and went. A thunderstorm w/ lightening passed very close to camp.

At around 4:00 pm a pair of type 5 crossbills were attracted to the decoys. The ♂ was recorded precapture on JGG GGB (very few calls) and then caught in the net. The ♀ was caught soon after. The ♂ was numbered 406. He took very poorly to





J. Broth  
1986

Journal

107.

Tennessee Pass, elev. 10,400 ft., Eagle Co.,  
Colorado

5 June captivity, bashing himself against the cage.

I decided to make a specimen of him before he got too bloody and lost too many feathers. The ♀ was numbered 407 -- she had an active brood patch.

Bird 407 was kept in captivity overnight.

At dusk, the clouds cleared a bit with strong westerly winds. A large (~20) Canada geese flew over the pass, heading N (this was after sunset.)

At night, rain came and went, with thunder, lightening, and some hail, and this rain continued almost until dawn.

6 June The early morning was mostly clear, although everything was wet from the rain. No crossbills were encountered this entire day. I spent the day at the campsite, enjoying the sunshine (only a few cumulus clouds -- never a buildup or rain) and stuffing skins of previously collected birds. Bird 407 was the only bird killed & prepared today.

Canada geese were in flocks this am, going N over the Pass. It does appear they use the Pass as a flyway,



J. Groth  
1986

Journal

108.

Tennessee Pass, elev. 10,400 ft., Eagle Co.,  
Colorado

6/10/86 as no flocks were observed far from  
the midline of the pass.

Gray jays always about, foraging  
in groups of 2. Often, after one  
individual would get a food item, either  
a handout or natural, the other  
would give a brief throwing-back &  
vibrating of the wings with a begging  
note. I believe it would not be

difficult to study the vocalizations of  
these jays in their natural env't  
as calls seem to fall into neat  
categories: "wee-o", "wee-o-weet", etc...

A noted pair came to camp regularly  
(every 4 hours or so...) and foraged and  
I gave them bits of food.

Abundant were the ruby-crowned  
kinglets in this area. territories must  
be rather small, as might be expected  
for so small a bird.

Pine grosbeaks were around. Pairs  
were the only group seen. Perhaps  
one pair frequents this spot.

Mt. chickadees, white-crowned sp.,  
male brown-headed cowbirds - a ♂ mt.  
bluebird foraged at this spot often  
a broad-tailed hummingbird, yellow-rumped



1. Grote  
1986

Journal

109

warbler, flicker, pine siskin, violet-green swallow, and goshawk

The night was fair and cold -- to below freezing (as each night here so far.)

7 June The morning was mostly clear. Some crossbills were encountered, but only in the very early morning. All of the encounters are logged on Tape ~~66B~~ yes, 66B.

At first, only a pair and a lone bird flew over, not to be lured close. Then, a flock of six came in -- all to fly-off but a single ♀, who was recorded pre-capture and then shot. [yikes, checking back I have just found that I have mis-numbered the field catalog. If ♀ 408 was 266 305, then all the following -- up to 313, should actually have +1 added to the collector number -- change this, then, on all name tubes from 305 - 313!] [also, #408 should be 266 305, not 304!]

After this ♀ was obtained I waited around the rest of the morning at camp. No crossbills were encountered. I then packed up camp and headed into Leadville,



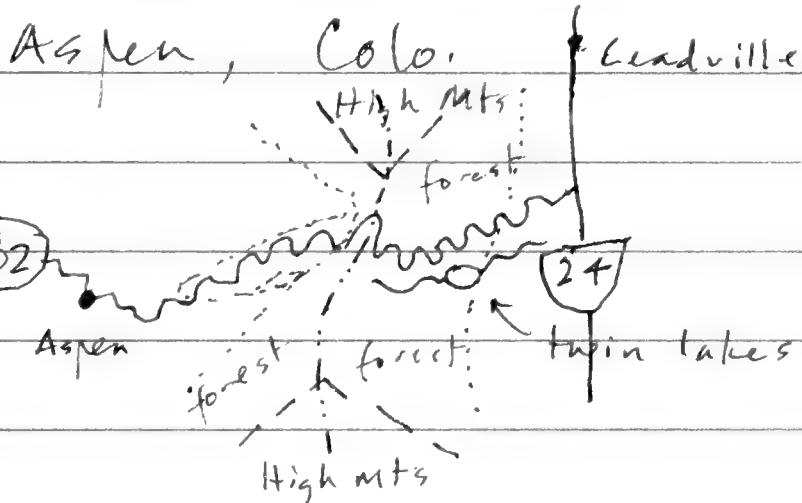
J. Groth  
1986

Journal

110.

## Colorado, cont'd

June 7 and from there, at about 3:30, I drove from Leadville S to Hwy 82, and explored the area from that intersection to about 10 mi. W of



The forest was, from E to W, composed of dry, open, ponderosa pine savanna, grading to lodgepole savanna, to thick lodgepole, to mixed lodgepole/spruce/fir. The cones on ponderosa pine were not spectacular -- only a few of last year's (open, tan) and sparse this-year's (green). The lodgepole here was not as good for cones as the area N of Leadville. The spruces had only a few trees with lingering old, dark brown cones and little evidence of what will be in store here for this year -- (anything?) Maybe 2 years will be a good spruce crop here.

Around the W side of the Divide, the forest was mostly only in the river





J. Broth  
1986

# Journal

111.

Tennessee Pass, elev. 10,400 ft., Eagle Co.,  
Colorado

June 7 valley and the higher elev's ( $>9500$  ft), Hwy 82 went lower and lower, until the road went only thru grassland habitat.

I then drove back to the regular campsite at Tennessee Pass. It was a clear night, the few grayer rain clouds dissipating. As far as weather, there were a few storms/showers around, but very patchy. Winds now more westerly, as previously in the week they were northerly.

I also called home to Albany today at around 5:00.

June 8 This was the morning for lots of crossbills. At first, a pair and a lone ♂ passed-by (all Type 5) in the very early hours, then a pair was captured (#409, 410) followed by a lone ♂ (#411) who was also pre-recorded in song above the netsite. After this, a flock of about 5 type 5 birds came around, but did not stop for long. This was followed by 4 ♂ type 2 (all captured, #412-415). Then, a large flock came in - about



J. Groth  
1986

Journal

112.

Tennessee Pass, elev. 10,400 ft, Eagle Co.,  
Colorado

8 June

18 or so birds, all sounding like type 2 as they passed over on the ridge to the N. One member (or so I think) was a lone ♂, type 5, who was later shot.

Other encounters with crossbills occurred, one or more fly-overs which excited the decoys. One group was 6 type-2 birds who did not stay long and took off -- leaving behind a single ♀ who was later captured & killed immediately (bird 417).

Another encounter came later in the morning -- a lone ~~♂~~ ♀ (#418) who was recorded then shot.

Later in the afternoon, a (pair?) arrived at camp -- at least two birds were captured at the same time -- birds 419 & 420, both type 2. Some pre-capture song of 419 was obtained.

Other birds noted today included a lone Clark's Nutcracker flying over the pass at about 6:00 am. Additionally, some encounters (notably 2: a lone ♂ in the morning and a pair in the evening) were almost certainly white-winged Crossbills. The evening pair was tape recorded a



J. Groth

1986

Tennessee Pass, elev. 10,400 ft. Eagle Co.,  
Colorado

8 June

little on 166 67 B -- see short cut of their flight calls for positive i.d. Another bird around included common Nighthawk -- uncommonly heard at evening.

All of the birds, (crossbills) were processed today with the exception of the pair 419 & 420, who were kept overnight.

The evening hours saw thundersstorms all around, but I got a lucky break by being in a sunny spot, until late evening, when the storms closed-in. At night, rain was on & off.

9 June

The early morning dawn hours were gray & dismal. At 5:30, it began to snow heavily until there was about 3 inches of wet snow. Not much bird activity, although I got the net set up by 7:15 am. No crossbills were heard. Other birds were not active during the snowstorm, and the violet-crowned kinglets did not sing until about 9:30 am.

No crossbills were captured today. Only at two instances, one where I thought a type 2-bird was around.



J. Guth  
1986

# Journal

114.

Tennessee Pass, elev. 10,400 ft, Eagle Co., Colorado.

9 June In mid-afternoon and another at around 5:30 pm when 395 (type 5 ♂) got very excited, and I think some type 5 birds were about, or just flew over.

The snow melted by mid-afternoon, and there were some spells of sunshine however brief. Winds increased, to come gusting at 30 mph out of the N and NW, knocking the tarp off the truck.

I took down the nets at around 6:30 pm. Rain began to fall heavily by 7:00, becoming a sleety hail and snow.

The birds 419 & 420 were processed today.

10 June This morning was colder and grayer than yesterday, with gray skier and blowing sleety snow. Birds were hardly moving. I took the decoys out and put them on top of the truck just briefly. I left the Tennessee Pass area before 8:00 am, traveling up Hwy 24 to I 70, then West.

The clouds remained common across Colorado, thinning slightly westward. The highway passed into Utah, and from





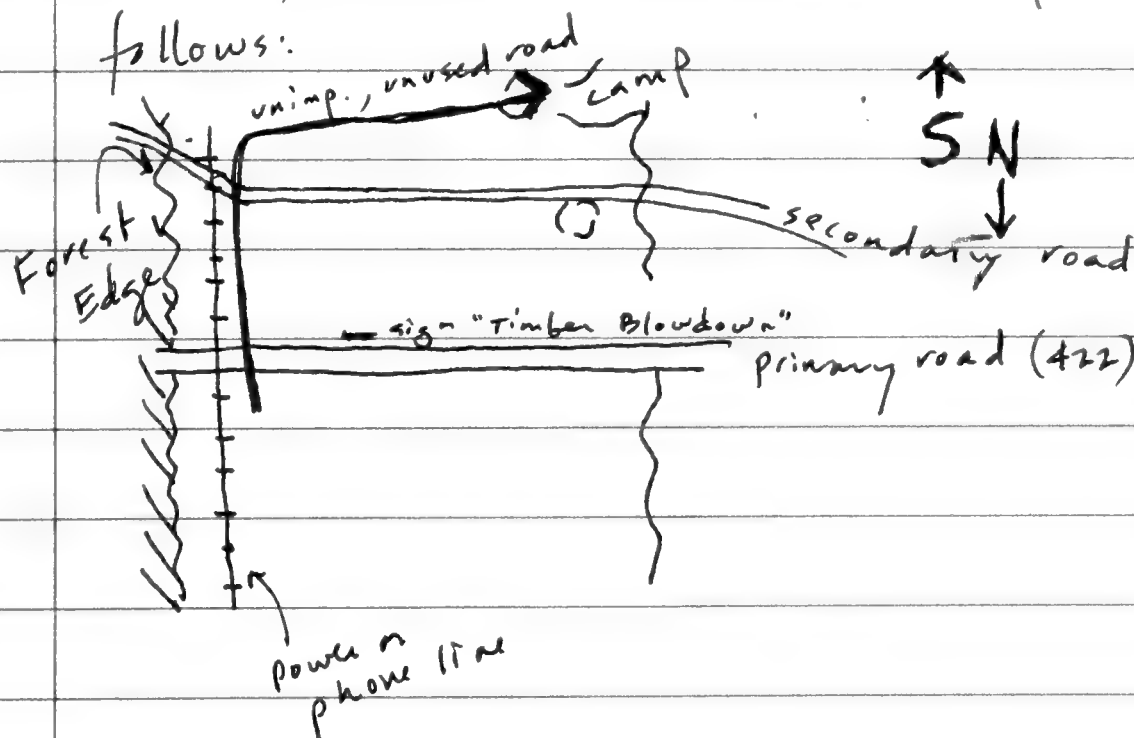
J. G. G. H.  
1986

Journal

115.

10 June there I went S on 89 to Kanab,  
Utah.

From Kanab, which I reached by late evening, I drove S on the road to Jacob Lake (89A). About 14 miles before Jacob Lake, at Fredonia, a road goes up to the Kaibab ... this was marked as "closed to public use" for logging trucks. 422 is the number of this road; I took 422 A to 422, up the canyon to the Plateau and camped at the "Timber Blowdown" area, in the exact position as follows:



As I drove along 422 along the top of the plateau, I noted that the Ponderosa pines were nearly totally bare of cones. No old, no new. Only grey cones on the ground from previous



J. Groth  
1986

journal

116.

10 June years. (the big crop of 1984). No flowers on trees. However, on the higher elevations the Englemann spruce looked very good, with a good crop of new (still small, red) cones with last years moderate crop still on the trees, empty.  
the evening became clear & starry.

11 June The previous evening I had cut an Englemann spruce top for the net setup. I set up the net in a gravel area, with decoys 387 & 395.

A large flock of Type 2 crossbills arrived 1 hour past sunrise. Half the flock branched-off & flew on. Others stayed interested in the decoys (387 called loud & vigorously).

Some of the birds came down, but not far enough to get caught, then quickly back to the treetops. One male came down & got caught (bird 421). The net setup fell over then, but no other crossbills came near the setup.

I then decided to follow and



J. Groth  
1986

Journal

117.

11 June

watch some crossbills after they lost interest in the decoys. A group of four birds, three ♂♂ and a ♀, were seen foraging on lугleman spruce. The birds paid no attention to either the old or new cones: foraging was strictly on the new green shoots, at their very tips. I do not know whether the birds were eating the vegetation, but I think the birds were searching for arthropods.

Later, I walked a bit around the "timber blowdown" area. I found a pair (♂ + ♀) of crossbills, again they began to forage on the spruce in the way described above.

At a later time in the morning, a group of crossbills came around (3 ♂, 1 ♀), and I got some recordings of one ♂ and shot him. This was bird 422.

Crossbills were not encountered later in the day. By before noon things became very quiet, and while the commoner carduelines continued to be heard (pine siskins, Cassins Finches) crossbills certainly weren't around.



J. Guth  
1986

# Journal

118.

11 June The two ♂♂ obtained today were processed (421, 422).

The day was cloudy only over the very highest parts of the Plateau (where I was) -- clouds formed & disappeared in place, while the surrounding desert was clear.

12 June I had moved the net to a better location where I could put the poles securely into the ground. Again, crossbills came around about 1 hour past first light. The birds would not come down to the decays all day.

A group of 3 birds came around, and I was able to record 1 individual and shoot -- this was bird 423.

Male crossbills were generally in song. Birds seemed active -- in a pre-breeding state. It must be that these birds were in breeding condition without being exposed to a good seed crop.





J. Groth  
1986

Journal

119.

Northwest trip

July 22 Left Albany about 11:30 a.m. Heated out 80 to 505 to I5, N to Red Bluff. Took 36 W to Wildwood, then N on forest roads to Hwy 3, then W to Hayfork. From there, I went W to Hyampson. The cone crop on the Douglas fir & ponderosa pine was poor in the Coast Ranges, with only old brown cones on the Doug Fir and nothing on the ponderosa pine. From Hyampson, went W to get onto 299, then W to 101, then N on 101. By nightfall I was in Redwood Nat'l Forest. While it was already dark, I drove E on Bald Hills Road until just past the Lady Bird Johnson Grove, and I camped on a logging area.

July 23 The campsite was in a forest of redwood & doug fir. The fir had last year's crop of cones only. Heard no crossbills. By 8:30 I drove back down to 101, then N to the turnoff to Fern Canyon. Drove in there, (saw a herd of elk) and found the good sitka spruce crop -- did not stay here because of fog. Drove N on 101, stopping occasionally; the sitka spruce crop was very good all along the coast until past Florence, Oregon, where I



J. Groth  
1986

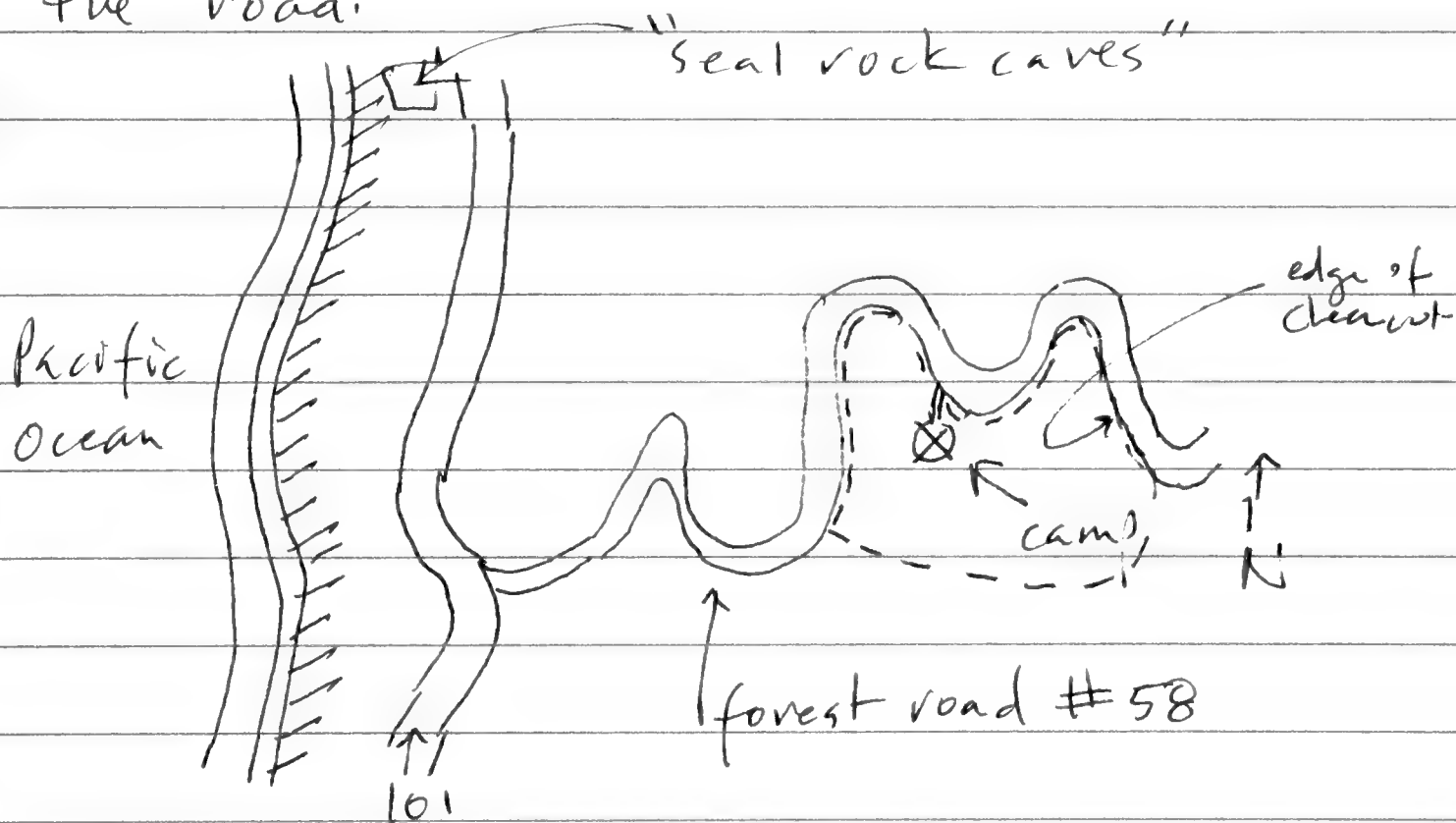
Journal

120.

July 23  
(cont'd)

explored the National Forest. [I did drive E on a forest road, just N of the Calif/Oreg. border -- the sitka gave way to doug fir inland -- only old cones].

I found a place to camp where I heard Crossbill song coming from the side of the road.



The camp was in a clearcut area at about 700 ft; good view of the ocean.

I had also explored nearby areas but did not find a good place to set up.

At this locality, I heard & saw crossbills singing & calling -- all Type 4.

July 24.

A good day for crossbills -- captured birds #428-442. Heard many others -- mostly type 4. I estimate about 85% type 4.



J. Broth  
1986

Journal

121.

and about 15% (or less) Type 3. thought I heard Type 2, but this may have been just a variant of Type 3. I made extensive tape recordings today. The weather was fair, with fog along the coast; burning off, then becoming windy (very) with no consistent direction -- also gusty. Pink siskins also very common here -- a few American goldfinches around. Other birds: sharp-shinned hawk, band-tailed pigeon, Alex's (or Rufous?) hummingbird, olive-sided F., wren-tit, song sparrow, white-crowned sparrow, flicker, Wilson's warbler, steller's jay (uncommon), Common nighthawk, crow, raven,  
Other notes on tapes J6668 & J6669.

July 25. Spent the day catching & dissecting crossbills (caught 9 more). I had to roll up the net by noon since I could not keep up with the work.

Still mainly Type 4 birds, with a few Type 3's. No Type 2's. Much activity all day long, with song of wild x-bills and lone birds (♂'s) and small flocks flying over. By the end of the day, I had skinned all of the 24 birds captured & recorded so far.



J. Groth  
1986

Journal

122.

July 26 I went into Florence this morning to get supplies and call home to Albany, CA. While in Florence, I heard a crossbill fly low over the Safeway store parking lot giving flight song (Type 3 or 4?). I spent the remainder of the day back at the camp stuffing bird skins all day -- did not set up the net. Heard mostly Type 4 birds, occasional Type 3's. My estimate for the area as a whole: 75% Type 4, 25% type 3. Flocks of juveniles were common. I never observed a mixed flock of Type 3's and Type 4's. The weather was mostly very good, with some fog rising into clouds - but generally fair & warm -- 70°'s. Lot's of fishings, also a house finch came into (around) camp. A flock of evening grosbeaks flew over. A turkey vulture was seen.

July 27 I spent the morning prepping skins. The weather was about the same (breezy as usual). Type 4's + Type 3's around. At about 11:30 am I finished the skins and headed N on 101 just to explore. Drove as far as Tillamook where I took 6 to the E. Sitka spruce





J. Groth  
1986

Journal

123.

July 27 continued to be good all along the coast.  
(cont'd) I explored around the Tillamook State Forest, but found that here there was only Doug fir with an old (last year's) crop -- and doubtless few if any crossbills. I drove thru Portland, then continued E on 26 to Mount Hood. At the turnoff to 35 North, I went N. Here at the high elevations was the same old crop of cones on the Doug fir, with a sparse to nothing new crop. Lodgepole pine was not abundantly coming (small crop) and the cones were still green. I found my way east on forest roads (primitive) until I found a campsite in a cleared area of Doug fir, about 5-8 mi. ESE of Mt. Hood.

July 28 At the camp area were many evening grosbeaks & pine siskins, also a Cassin's finch, but no crossbills. Set up a net, but took it down by 8:30 am. Weather very good, clear. Drove E to Wamie, then N on 97 to the Palles, then E on 84 to 730, then N on 395 past Pasco, Washington, then onto 21 N to Wilbur then continued N



J. Groth  
1981

Journal

124.

July 28  
(cont'd)

to the Columbia River where I took a small car ferry across (no fee), then continued N to Republic. Here I turned E on Hwy 20. All along this part of the Route, at least since the River, was a habitat of ponderosa pine savanna grading into Doug fir mix at higher elevations. Ponderosa pine: no cones, old or new. Grey old cones on the ground around the trees. Doug fir: old crop of moderate size: now no seeds in cones. At high elevations along 20, up to Sherman Pass, the forest became one of mixed ponderosa, lodgepole, Doug fir, western larch, and Engelman spruce (along low areas). The Engelman had a good crop of new cones; the larch had a poor new crop. Lodgepole: good here. Ponderosa: nothing. Doug fir -- moderate new crop. I explored along South Sherman Road, also along the road up to Graves Mtn., also Kalomik Road. Generally -- few places to camp around here, with not many good-looking areas to set up for crossbills. Saw + heard nothing, but I was exploring late in the day. I finally camped at the Sherman Pass Nat'l forest campground,



J. Broth  
1986

Journal

125.

which was free air in a lodgepole  
grove on a ridge.

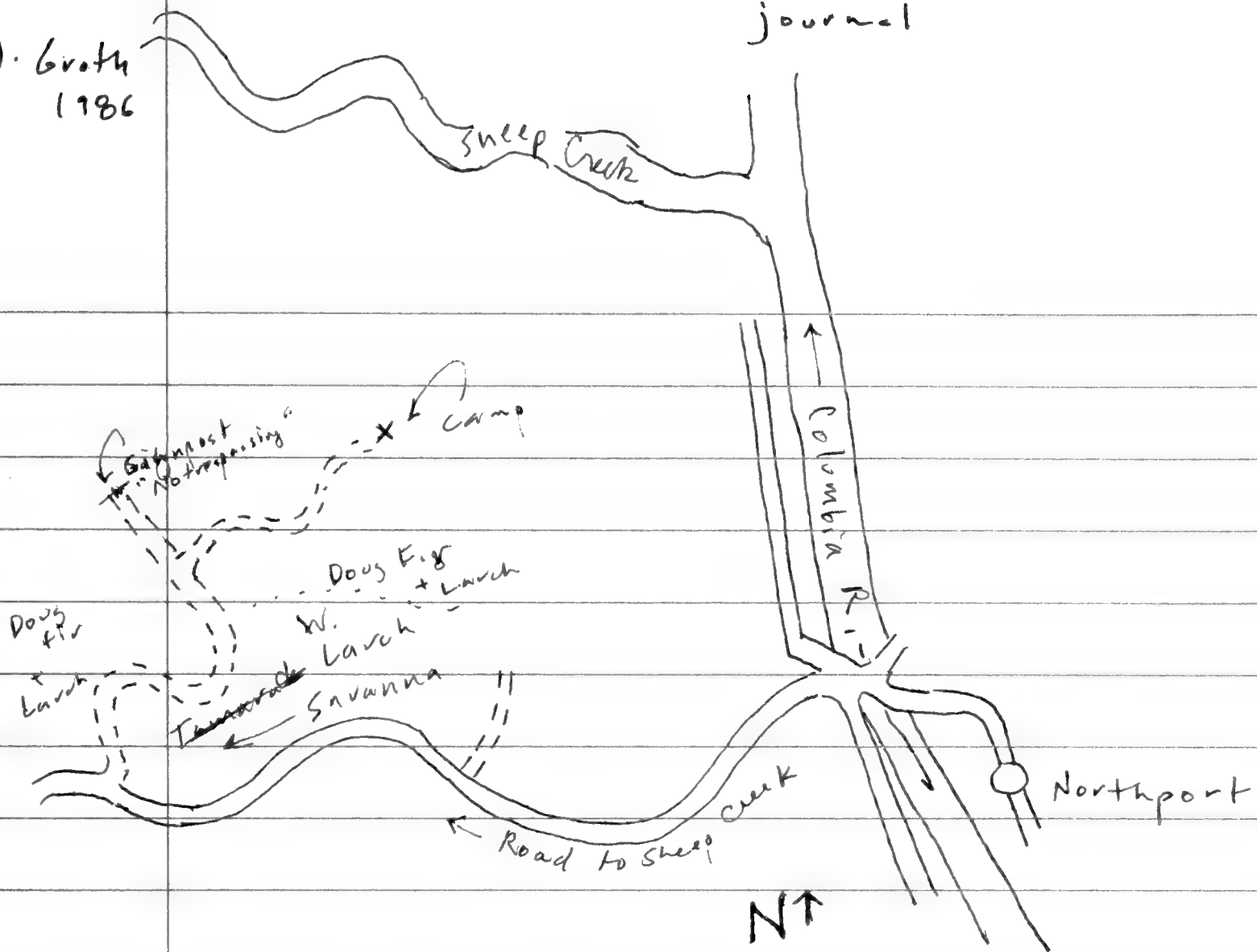
July 29 At the campsite the decoys attracted  
a pair (ad ♂ + ad ♀) of Type 4 crossbills  
at around 8:00 am. They came right  
down into camp. No other crossbills  
were heard. I then took off to  
find a good site. I drove E to  
Colville, then N to Alladin and  
past this, N almost to the Canadian  
border. The cone crows were generally  
as they were at the Sherman Pass  
area. The road to Alladin was through  
a valley -- all ranches + no place  
to set up. I then crossed the  
Columbia River at Northport and  
drove W on the road to Shiel Creek  
campground. I stopped at a place  
about a mile from the C. River  
where the road went through a  
partially cleared area -- opened the  
car door + immediately heard both  
Type 2 + Type 4 crossbills. Made  
a few recordings of birds calling +  
singing in the larches (which here  
had a good (moderate) crop, but apparently just



J. Groth  
1986

Journal

126.



in this local area, I do not know, but NW of this site may have had good cone crops.

I set up a camp by mid afternoon. I set up a net by a brushpile in a "corral" or low area in a gulch surrounded by trees (aspen, larch, douglas fir, white pine). I heard crossbill song as I first explored, I think type 4 (did not sound true 2-like). A flight song. I then lured some crossbills to the area, and heard many fly over. Birds were generally in small groups (3-4 birds). except some flocks of type 2's were larger (up to eight in a flock).

I lured a group of 4 type 2 birds nearby, as well as a lone female





J. Grotk  
1986

Journal

127.

Type 4 bird (on tape). I took a shot at the type 4 ♀, but only "stunned" her, as she fell & hung upside down in the tree, and as I reached for her she flew strongly to nearby trees. I thought I heard her mixing w/ the type 2's but no visual sign of her.

Later, I caught a juvenile from a flock of type 2's -- bird #52 (JGG 349).

I also set up a net on a ridge above the camp, -- more exposed.

I heard birds through the evening, but attracted none. I estimate a total sightings as about 70 individual type 2's and 30 Type 4's -- most were not identified to age or sex.

July 30 Today I collected a total of ten crossbills: 6 Type 2's and 4 Type 4's. I stopped netting between about noon and 3 pm, to avoid heat and I had already captured many. I began to release some birds arbitrarily.

Other flocks of crossbills were seen today. Nothing but about a 65/35 ratio of Type 2's to Type 4's -- and birds around



J. Groth  
1986

Journal

128

to be utilizing the larch -- note the coloration in the specimens -- I saw few or no "red"-plumaged juveniles, rare red males and adult females. Adults comprised about 10%<sup>-or less</sup> of the birds seen. No adults were released -- only juveniles that looked similar to those already obtained.

Other birds: evening grosbeak, pine-sisking (abundant), stellers jay, solitary vireo, empidonax, osprey, robin.

July 31 Today was a near repeat of yesterday in terms of crossbill occurrence and behavior. Generally flocks of Type 2's and Type 4's. I did not really have the opportunity to make many general observations as I worked with specimens the entire day.

Collected included one type 4 juvenile and seven type 2's, including a pair of adults.

Aug 1 I left the Sheep Creek area today and drove to Colville, WA, got supplies, then drove to explore northern



J. Groth  
1986

Journal

129.

Idaho. I drove E on Hwy 20 to Tiger, then S on 20 to Newport. From there, I took Hwy 2 east to Sandpoint.

The conifers along this route included ponderosa pine (nothing on the trees); doug fir (poorer and poorer crop, including mainly just the old crop); white pine (with the old cones [empty] from last year); western larch (nothing on the trees here); Engelman spruce was not apparent until I hit higher elevations in Idaho. Around Sandpoint, the crops on all trees was poor.

I drove into the road along Trestle Creek and drove up the mountain to the lookout tower and ridge. Here Engelman spruce had the remains of the old crop (which was good) and few new cones. Nothing else had cones.

I drove down again to Hwy 200, then took it S to Clark Fork. There, I crossed S into Nat'l Forest land on a one lane bridge.

I followed the road always upward and southward. Soon I reached high elevations, but there were no dramatic shifts in vegetation until



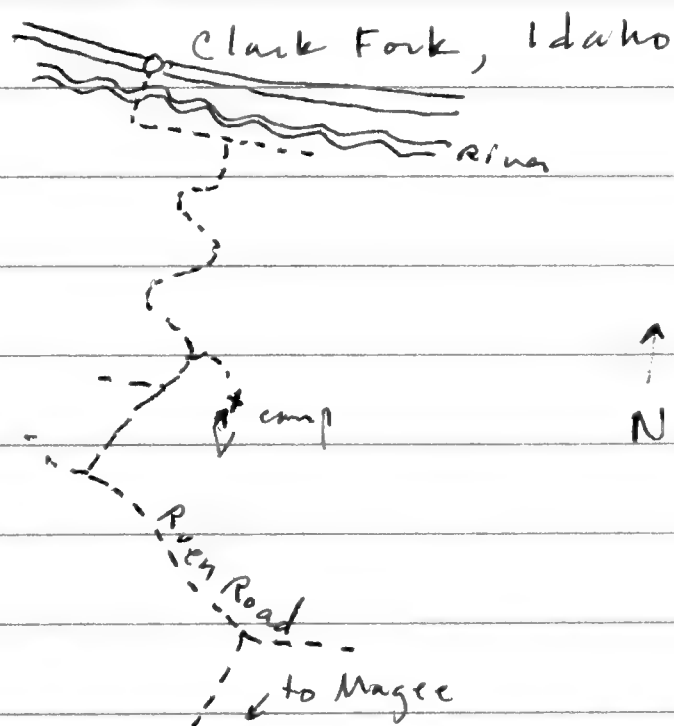
J. Groth  
1986

Journal

130.

I hit some of the crests, where Englemann spruce became dominant, and had that fair old crop of cones, and rare trees having new cones. Larch had nothing here, and white pine the same as elsewhere, including Washington (a moderate old crop.)

I stopped often looking for crossbills, but heard none, nor expected any. I finally camped at a high elev area, as indicated [check NVZ topo maps for true locality.]



Aug

I set up camp in the evening. I encountered a bear as I walked down a logging road. [I had also seen a bear while driving the back roads.]

I haven't quite thoroughly checked the area





J. G. G. G.  
1986

journal

131.

for signs of crossbills, but cone crops were poor. Lodgepole pine was here, but not a good crop.

Aug 12 the camp was in an area somewhat logged, but with fairly good-looking habitat for crossbills. Some trees had cones [Engelmann spruce] but nothing on white pine or larch. Doug fir had a very few new, green cones.

At about 6:30 a pair of Type 2 adults came to the decoys, as 387 had especially called loudly. I recorded the birds but did not get them.

Later, a lone ♂ Type 2 came around. He called for a long time (>10 min) from the tree tops, but would not come down. I played his calls back to him about 6 times - (maybe 10 times), this excited him somewhat, and finally he came down and was caught. (Bird 470). -- a pinkish adult ♂.

It was going to be a long, hot day. I prepared the specimen, then broke camp by 9:00 and headed out. <sup>Pine Grosbeak</sup> heard here.

I drove to Magee, then finally came out of the forest at Wallace. From



J. Groth  
1986

Journal

132.

there, I went W on the freeway (84) to Hwy. 3, and took it S to Elk River, Idaho. There I went E, over the Grand Bridge, and camped on the E side of the Dworshak Res. Along the route, all cone crops were poor.

I did not see crossbills anywhere along the route.

Aug 3 I drove S to Headquarters, then S on Hwy 11 to Greer, then S on 12 to Kamiah. From there, I continued S all the way to <sup>Bank</sup> ~~Cascade~~, Idaho, and took the road E from there all the way to Stanley, Idaho, in the Sawtooth Mountains.

Around Stanley, was a plateau area with lodgepole pine savanna. The cone crops were fairly good here.

Some Englemann spruce had the familiar old cone crop, with the moderate new one. Weather was hot & dry in Idaho today.

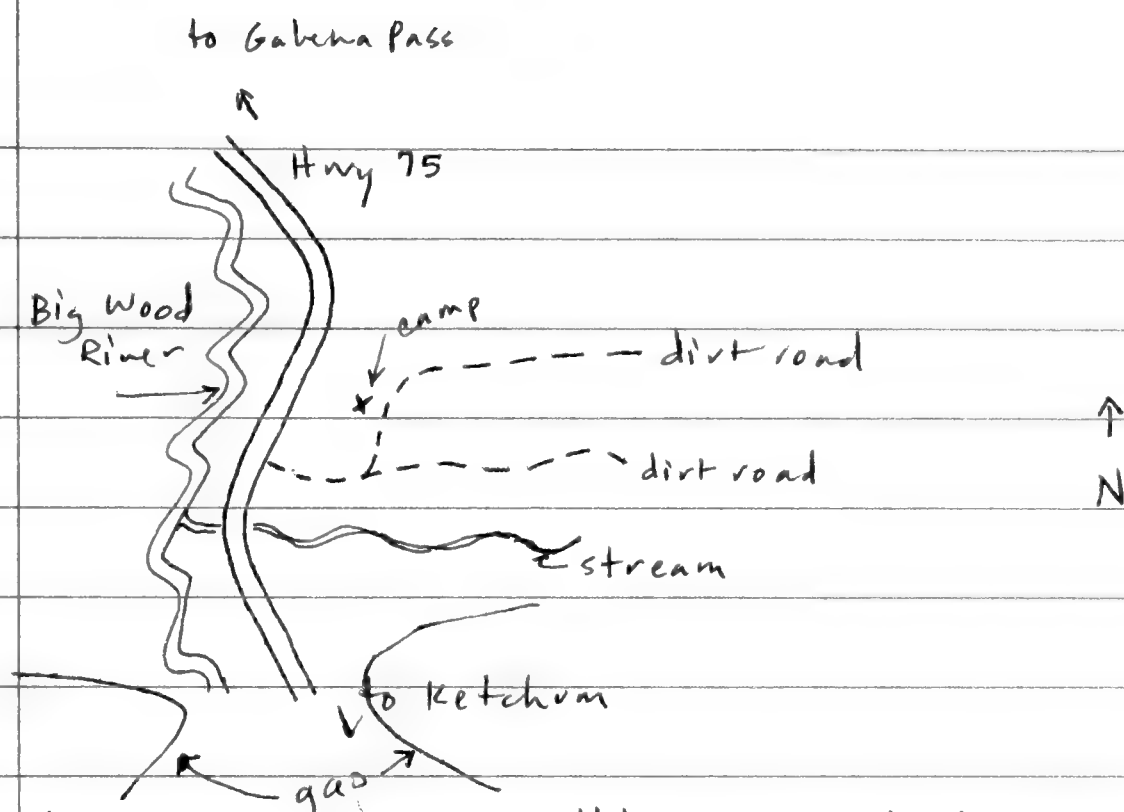
Aug 4 Crossbills were noticed immediately in the morning. I was camped on a road near Spring Creek off of the Big Wood River, as indicated



J. Groth  
1986

# Journal

133.



I was on a hilltop overlooking a natural gap (the river cut), and with a good view of the savanna all around.

I first heard some type 2 birds very early, and it turned out to be a group of 3 juvenile ♂♂, 2 of which were shot & collected (birds 471 & 472.) Later, more type 2 crossbills were seen, most of this activity recorded on tapes J66 70 & 71. Some Type 5's were seen (a pair & a lone bird) but none were captured. I saw no adult ♂♂ today, just flocks of Type 2 juveniles. Birds were seen to forage on lodgepole, which had a good, ripening crop. Birds would rarely dislodge the cones, but sometimes cones would fall, and trees had a few used cones on the ground.

I captured a bunch of birds, then



J. Broth  
1986

Journal

134.

wrapped up the net.

Other birds were Clarks Nuthatch, (scarce), flocks of juvenile chipping swallows [no! adults seen!], Cassin's finch, pine siskins (uncommon), robin, Audubon's warbler, evening grosbeak (uncommon), western tanager.

Aug 5 More netting of crossbills today. Almost all birds in groups of Type 2's. A flock of four Type 4's were seen today. No type 5's heard today. I estimate that I encountered about 100 birds, almost all Type 2 juveniles. No adult ♂'s seen, and only rare full adult ♀♀.

No singing was heard. Birds appeared to forage actively on lodgepole pine. Flocks sometimes moved very low to the ground. No groups over 10 in size were seen today, few birds were alone.

I saw gray jay and pine grosbeak in camp today, both as pairs of what looked like young birds.





J. Groth  
1986

journal

135.

Aug 6. I remained at the sawtooth site until about 2:00 pm, after I had collected an additional eight birds. Two type 5's were obtained today (the only two encountered); no type 4's were seen. Again, flocks of Type 2 juveniles. An adult ♂ (the only one seen in this area) was collected [bird 488].

The weather was hot & dry again, but smoky, as fires in Oregon forests was <sup>sending smoke over</sup> much of S Idaho these last few days.

In general, it was a "slow" day today, both for crossbills & for other species, as the grosbeaks were not seen, nor the gray jays. I did have a porcupine walk into camp.

I drove to Boise later and stayed at a motel.

Aug 7. Drove to the Nat'l Forest (Wallowa-Whitman) around Unity on Hwy 26 in Oregon. From around 9:30 to 5:30 I stuffed skins in a lodgepole pine area. The dewys were out [birds 387 & 395] but were not excited very often by passing cardinals. One type 2 bird was



J. Groth  
1986

Journal

136.

heard but not attracted. pine siskins were uncommon.

Later, I drove W to the Nat'l Forest on Hwy 26 just W of Mitchell, and slept out.

Aug 8 The camp area was ponderosa pine forest, like a savanna with many trees. No cones on the ponderosa pine, and Doug fir looked "dead" with brown-tipped branches. [This was true elsewhere, including S Idaho along the roads W of Stanley, Idaho. Western larch was common in these forests, but had no cone crop.

I put out bird 387, but she attracted nothing with her loud, rapid calling. She seemed particularly excited to see that she was in a new type of forest.

I broke camp, and continued W on Hwy 26 over the Cascades. I stopped a couple times in Whely areas, but heard nothing. Cone crops were poor, on all conifer species.

I drove through Eugene, on to Florence. The weather was getting hot, into the 90's.



J. Broth  
1986

Journal

137.

Aug 8

At Florence, I drove many of the roads N of the city. The flat areas in the basin along the ocean were largely a mix of Doug fir, lodgepole pine (coastal form), and Sitka spruce. All had new cone crops. Interestingly, Doug fir's crop was poor in the Coast ranges.

I saw no crossbills, nor heard any, as I explored several areas, including several Camargue's along the dunes.

Back at the old campsite of two weeks ago the fog and wind made a very dismal scene. The fog seemed to be particularly bad right at this spot.

I did not hear crossbills until late [around 7:30 pm] when I think I heard begging-like calls from S of the clearing [it got the decoys excited], but the weather was just too bad for observation.

Aug 9

Fog continuing, plus strong wind. I heard Type 4 birds in song N of the clearing, but attracted nothing into the camp.

I decided to drive around & look for nesting areas, etc. I drove and probed on



J. Groth  
1986

Journal

138.

a map localities I heard crossbills, plus the call type. I heard only Type 4 birds every place I found crossbills.

The traffic + people were very abundant all along the coast.

I found probable nesting Type 4 birds in tree groves among dunes at Honeyman State Park. [Type 4].

I continued S along the coast, checking for birds, but found less and less as I drove S.

I camped near Whalehead Island on private property above Hwy 101.

Aug 10

No crossbills were heard this morning, although I was near good Sitka spruce groves with abundant cones.

By 8:30 I began N again, explored near Gold Beach + Port Orford -- found no crossbills.

I finally found Type 4 birds at Point Arago in Sitka spruce habitat.

Late in the day, I drove E into the Cascades. The Doug fir cone crop was good only within 5-10 mi. of the coast, thus inland was no place for crossbills.





J. Broth  
1986

Journal

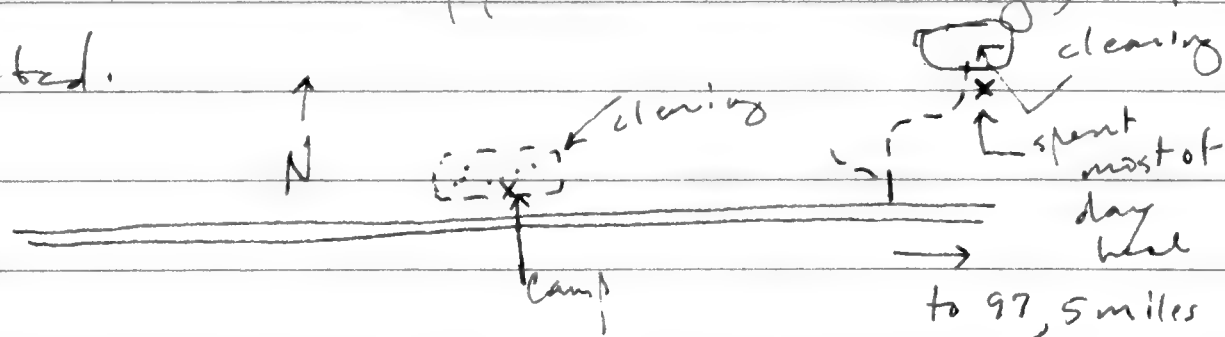
139.

Aug 10 I finally camped in a clearcut area of lodgepole pine just E of Cascade Pass and N of Hwy 138.

Aug 11 I immediately heard crossbills (Type 2) early in the morning. The clearing had small groups, lone males flying over. I collected an imm. ♂ Type 2 and an imm. ♂ Type 5. I had a group of 4 Type 5's visit the decoys twice, but could not collect any.

The noise of traffic on Hwy 138 made for a poor place to do work.

I drove to a different clearing, as indicated.



At this spot I found many crossbills, virtually all Type 2, the rare Type 5. I could not get birds to come down, but I did catch ♀ #497 and collected juv. ♂ #498 (both Type 2's).

This place was o.k., but I spent the afternoon driving forest roads looking for good places. The ponderosa pine,



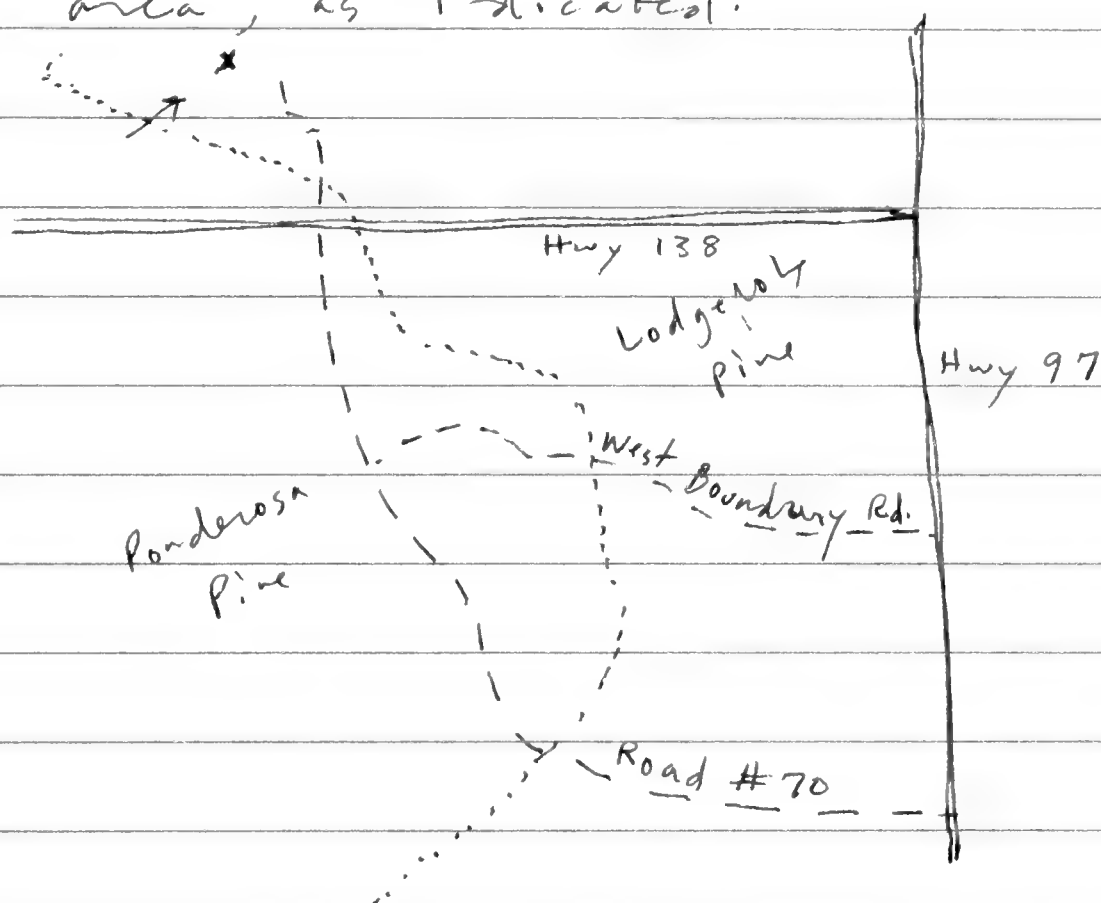
J. Groth  
1986

Journal

140.

which was present in pure stands, was bare of cones.

I found what looked like a very good area, as indicated.



Here I set up a camp, in good view of Thielser Pk. (which was 1 mi. W + 1 mi. N). I captured a couple of Type 5 juveniles travelling as a pair. I also heard many Type 2 birds around.

Aug 12

This morning I heard Type 2 birds around very early, lone males in song; lone birds calling in flight, small groups. One  $\sigma/\eta$  pair came down and almost was captured (these were adults.). A lone Type 5 juvenile was



J. Groth  
1986

journal

141.

Aug 12. Captured (bird 501) and a Type 2 adult ♂ was captured (bird 502).

Although this place seemed very good, the logging operation started up by 6:00 am, with noise that was very disturbing even though  $3/4$  of a mile away. I left the area by 7:45 and tried to find a new place.

After driving around, I finally settled on a lodgepole area somewhere about 5 miles E of the earlier spot, near a clearcut. Here I found Type 2 birds, and collected bird 503 (Type 2 male). I observed a group of Type 2's feeding young -- the young birds were giving both begging and flight calls. One bird was not fed, being low in the trees. I poked a stick at it and it flew strongly to a near tree. The bird was the only one I saw with a short tail and wings. The incoming adults were tooping before the feeding events. I collected the young juvenile (bird 504) -- his tract was empty -- I wonder if he was related to ♂ #503?



South  
1997

# Journal

142.

## California to Arizona

May 19

start  
mileage  
= 48895

Left Berkeley at 10:00 am for a field trip to SW United States. Drove to Oceanside to stay at my parent's home overnight. The weather was cloudy through most of the route, but clearing past L.A.

May 20

start  
mileage  
= 49245

Left my parent's home in Oceanside, Calif., bound for the Huachuca Mts. of S.E. Arizona. Past the clouds along the coast, the weather turned dismal and gray in the coastal mountain range. The Calif + W Ariz desert was clear and rather mild ( $\sim 80^\circ$ ) until the higher desert of central Ariz., where the clouds gathered and the wind was strong + gusting out of the S + W. directions. I took Hwy. 5 to San Diego, to 805, to Interstate 8. Rain + storms began in the late afternoon (or had been going on long before I got there) around Tucson. At Tucson and vicinity, it was raining, and I picked up some supplies there, around 5:00. From Tucson, I drove first E on I 8 to Hwy 90. Took 90 S to Sierra Vista. By the time I got





J. Groth  
1987

Journal

143.

Huachuca Mts., Arizona

May 20 to Sierra Vista it was almost sunset. I then drove South on Hwy 92, towards Coronado National Monument, and then took the road to Carr Canyon. The road was gated-off, with a sign "construction, to be opened in spring". I then decided to go to Sierra Vista and inquire about other ways to the mountains. I got gas at a Union 76 Station in the middle of town, where the lone attendant had a map and some knowledge of the mountains. It seems access through the Fort (Huachuca) is not permitted. I decided to try Montezuma Pass, so went back S on 92, then took a right turn to go to Coronado Nat'l Monument. By now it had been dark for an hour. I took the road west about 3-4 mi. past the Pass, and went up the road to Oversight Canyon. Past the road to the D'Albini Ranch (from <sup>topo</sup> map), I went up a jeep trail and thru a cattle guard. At the first junction, after about  $3/4$  mi, I went left



J. Guth  
1987

Journal

144.

Huachuca Mts., Arizona

May 20  
(contd)

and went up the jeep trail until it was blocked-off for the Miller Peak Wilderness. Here I camped for the night.

May 21

mileage  
49896

Overnite Canyon, elev. 6300 ft, Cochise Co., Ariz. The weather at dawn was partly cloudy around the mountains, remnants of all the rains. Temp ~ 55°. The habitat I was in was mostly oaks, with yucca (low type) and some sumac (?), but also conifers, with some Apache Pine, limber pine, and rare Douglas fir. There were also tree junipers. No crossbills were heard here, and I stayed until about 8:00 am. Mexican Jays were common, with Black-headed Grosbeaks, Rufous-sided Towhees, Black-headed Gray Wrenblers, and other birds I did not identify. Whip-poor-wills sang in the very early morning. (I saw a very grayish Great-Horned Owl last night, along the road). I walked the area somewhat, and also drove it before leaving. Map on next page.

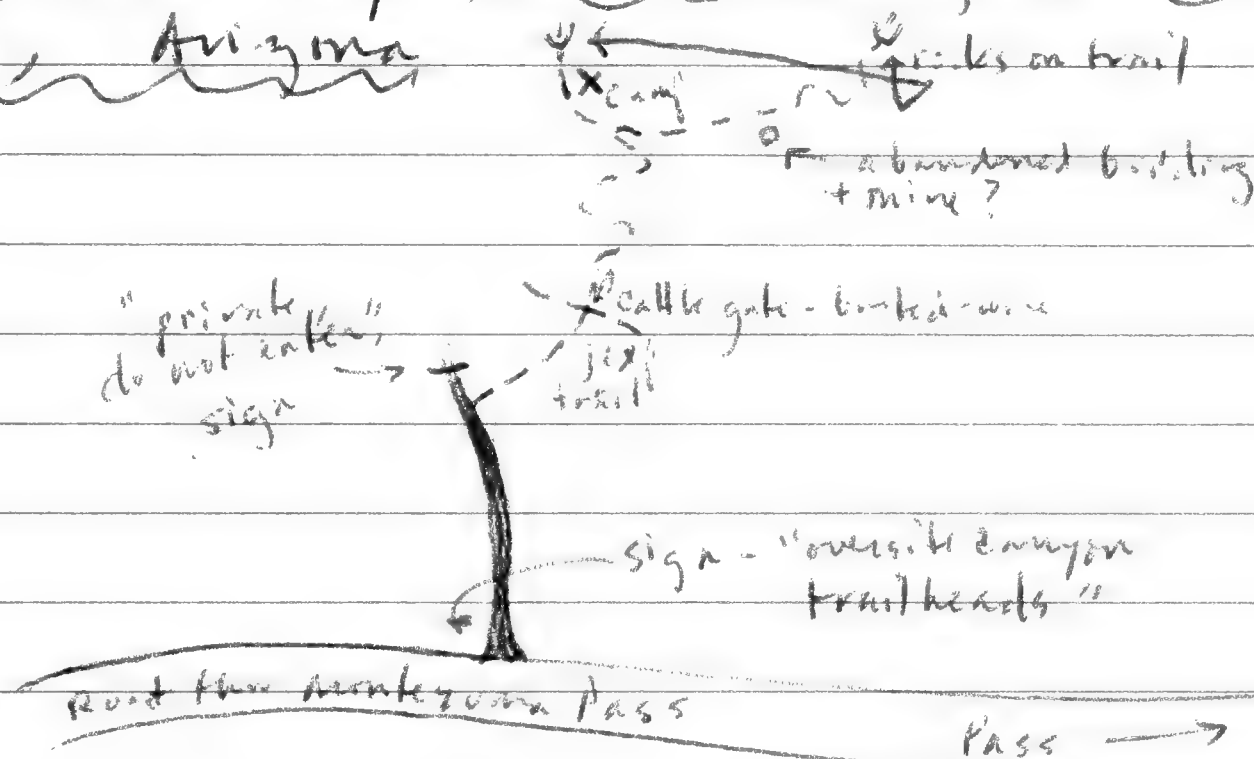


J. Grubbs  
1987

# Journal

145.

Aug 21 Opposite Canyon, elev. 6300 ft, Cochise Co, Arizona



I left the campsite at around 8:00 am. out in the desert, the weather was more sunny, but not very hot. I drove to Elmira via Bisbee, then took Hwy 181 to Hwy 186 to the road to Chiricahua Nat'l Monument. where the road forks, I took the gravel road to Piney Canyon and the Coronado National Forest areas. The weather was very good, not too windy. There were some large cumulus clouds over the mountains. It was still wet on the roads with potholes filled with water from the rains. I was destined for Banfoot Park. Along the uphill climb, I looked at the conifers



J. G. B. Th  
1987

Journal

146.

Chiricahua Mountains, Cochise Co., Ariz

May 21 at their condition and suitability for crossbills. The douglas fir looked like it had put out a good crop, and the cones were now depleted and drying. The loblolly pine had some new <sup>green</sup> + old cones. The yellow pine (Apache) was with ripe cones, but not extraordinary.

At Barfoot Park, I immediately saw two red crossbills on the road drinking from a water hole. They looked smallish. The trees had crossbills in good numbers, and I saw some others flying off from the water holes around the Scout Camp. All of the calling I heard was Type 2.

The decoys, birds 305 + 387, became excited and called. I did some taping (see JG 75A).

I set up a camp on a picnic table 150 meters west of the Main Scout building. Then I walked around observing and listening to the many crossbills around. All that I heard were type 2 birds, including flight calls, one good series of typical Type 2 alarm calls,





J. G. G. H.  
1987

Journal

147.

Pinfoot Park, elev. 8200 ft, Chiricahua  
Mts., Cochise Co., Ariz.

May 21

Some song (the "ooes's" sounded quicker and raspier than Virginia Tyl 2's.) and also juvenile begging calls. Adults seemed paired (but it was hard to tell with the flocking) and juveniles clinged to the parents and begged. The birds also were going down to the ground, apparently to forage (but for what? seeds, insects? -- they were not opening fallen cones.)

I could not get a shot at a vocalizing bird with the .22 gun. The birds were flighty. By about 1:00 or so, I noted some preening by the birds while they perched on low branches. Juveniles begged. I recorded some birds.

The wind began to increase, as large clouds occasionally broke the sunlight. It was cool -- only in the 60's.

The habitat here is almost pure pines -- mainly yellow pine. I think these pines are Apache pine (Pinus engelmannii), but the needles seem short (less than 9 inches)



J. Guth  
1987

# Journal

148.

Brumfoot Park, elev. 8200 ft, Chiricahua  
Mts., Cochise Co., Ariz.

May 21 according to the Golden Field Guide to  
(cont'd) Trees: However, the bark of the pines  
is dark-grayish, with furrows looking  
more like Doug fir than like Ponderosa  
pine. The needles are in bunches  
of 3-5. Other pines here are  
limber pine and var. Douglas fir.

Rare junipers, no oaks.

I watched crossbills most of the  
afternoon and evening. I did not  
catch any. I caught and  
collected a male pine siskin.

The crossbills were in medium-  
sized flocks of 4-10 birds. Most  
looked like adults, with about 15%  
juveniles, many of which begged  
from adults. Adults fed on open  
Apache pine cones. Juveniles (the  
two or so I saw) nibbled on tree  
bark. All calls they gave were  
just like typical Type 2, including  
alarms, toops, and flight calls.

I noted other birds, including  
Solitary vireo, black-headed grosbeaks,  
western tanager, yellow-eyed junco,  
raven, sharp-shinned hawk (seen  
on the drive up) stellar jay,




J. Guth  
1987

Journal

149.

Barfoot Park, elev. 8200 ft, Chiricahua  
Mts., Cochise Co., Ariz

May 21 flicker, robin. I saw a large buteo  
hawk, but did not identify it

At dusk, whip-poor-wills were  
heard, along with two other  
birds I could not identify. One  
was an owl that went "who"  
deeply, a very long interval. Another  
gave a very unusual buzzy  
whistled song, very lazy, with  
a long "who-eeo" <sup>kit</sup> 

I have these both near the  
end of tape J675A.

May 22 Dawn arrived at about 5:00 am.

Whip-poor-wills and robins sang.

mileage  
= 50009 Crossbills were about very early.  
the weather was partly cloudy,  
breezy, and cool (150's). I watched  
birds from about 5:30 - 8:30 am  
without catching any. The crossbills  
were in small groups, each usually  
with some juveniles, hopping from  
both adult males and females. I  
could see birds best right around  
Barfoot Park. Crossbills were seen  
to perch near the tops of Apache  
Pines, often and especially in the



J. Orth  
1987

Journal

150.

Barfoot Park elev. 8200 ft, Chiricahua  
Mts., Cochise Co., Ariz.

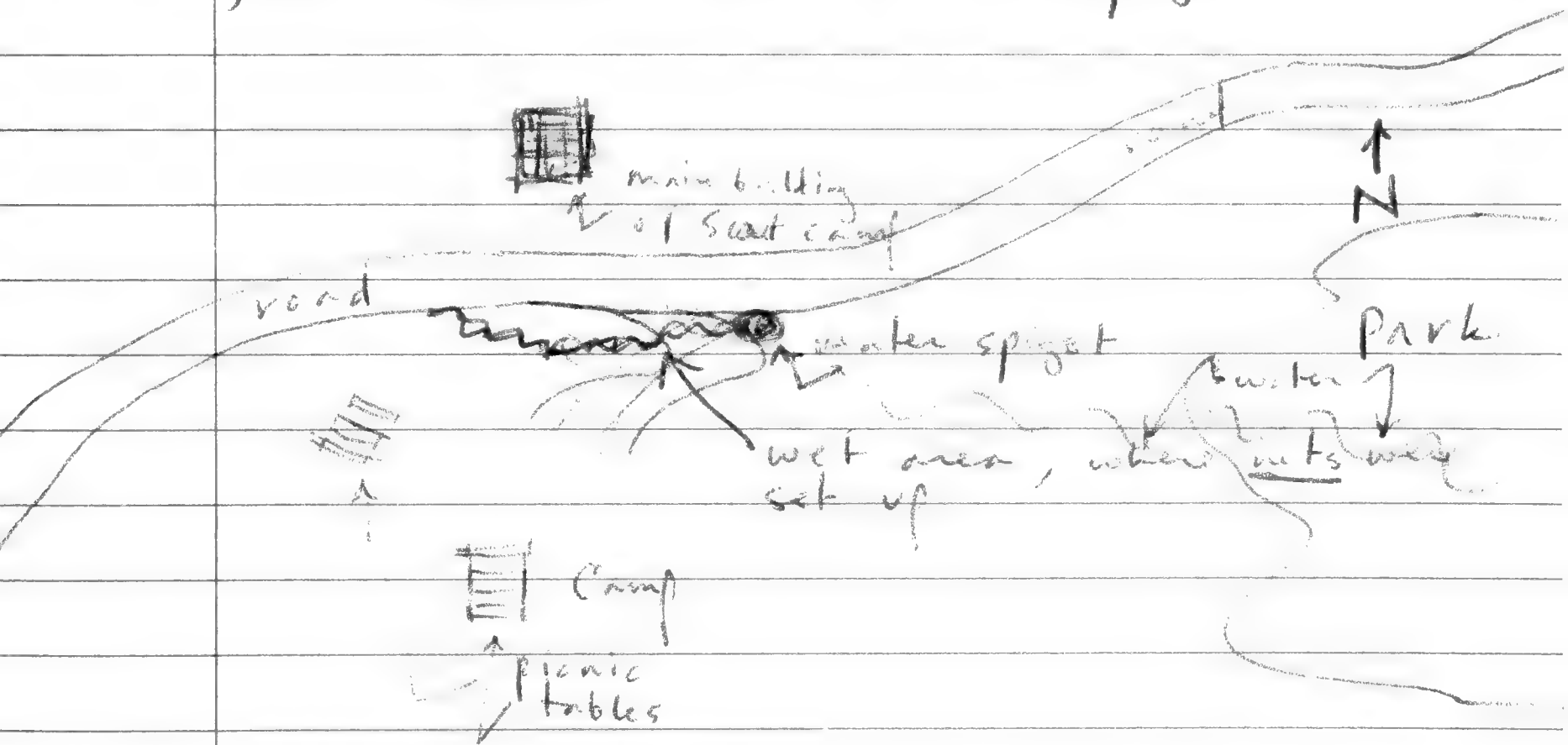
May 22

(contd)

dead spires of the tallest trees.

Juveniles begged here constantly (almost) and there was an almost constant calling of Type 2 birds all around the Park.

I had two 9 meter nets set up at the water hole of Barfoot Park just below the water spigot.



Much of the crossbill activity was centered right here at the Sweet Camp.

I caught 5 birds from a flock of about 15. Then, I got two more, and finally, I shot another juvenile after recording it beg from an orangish adult male,





Smith  
1987

Journal

Butte Park, elev 8200 ft, Chiricahua  
Mts., Cochise Co., Ariz

May 22  
(contd) who was not collected. I then set  
out to tape record the seven birds  
I had captured, so brought them up  
to the truck, and away from the  
road. As I sat recording and  
processing birds, some bird-watchers  
visited Butte; first, an old man  
(Morse?) (according to name on binoculars -  
"Morse - Postal"). He had an old  
black collie. He said he had  
seen 3 large flocks up the mountain  
and he also saw birds lower down  
(5-6,000 ft) earlier this year,  
and it was his impression that the  
birds were moving upwards in elevation.  
Next, a couple from central Texas,  
who seemed only mildly concerned about  
what I was doing there collecting  
birds. They said these were the  
first crossbills they'd seen.

I first removed a flock of 14  
crossbills from the net (8 adult males,  
5 adult females, and one juvenile)  
and folded-up the nets. All seemed  
Type 2 - sized and some gave  
type 2 flight calls upon release.  
One male gave type 2 alarm calls



J. Groth  
1987

# Journal

152.

Barfoot Park, elev. 8200 ft., Chiricahua  
Mts., Cochise Co., Ariz

May 22 while I waited him.

(contd) I collected a lone adult male who came down to camp late in the afternoon, (#522). His crop was loaded with pine seeds, and he was bright red.

I was able to skin all nine of the specimens, but did not stuff any. The sun went down at about 7:20.

The additional birds I noted today include pygmy nuthatch (seen yesterday), red-faced warbler, Grace's warbler, western flycatcher (vocalizations), Mexican chickadee, band-tailed pigeon. The birdwatchers mentioned Audubon's warbler and Olive warbler.

May 23 The dawn was clear and not too windy. Crossbills were around as usual. Some other campers (two guys in a car) arrived at Barfoot last night, and also two head of cattle were in the park, so I was no longer by myself.

I had trouble catching birds, and I chased birds around the park on occasion trying to tape record



## Journal

J. Guth  
1987

Barfoot Park, elev 8200 ft, Chiricahua  
alts., Cochise Co., Ariz

May 23  
(contd)

and collect an individual, but could not, since the birds were flocking so closely that I could not for sure identify individual callers. I was alone, the two guys had tried to find Ida Peak (they came into camp). The flocks were composed mainly of adult males (all red, as far as I could tell) and adult females, with about 10-20% juveniles. All were type 2's to my ear, with absolutely nothing unusual about their vocalizations.

Later a family of campers set up right next to me (while I was stuffing skins!) and their kids chased around screaming and throwing a firecracker near the nest site. I decided to leave the area. However, right before I left, I captured a pair of crossbills (a town pair) birds 523 and 524.

I then drove to a "quiet" area of the Chiricahua, just down the road about a mile. As I drove, I noticed the mountains were full of herds of birds, and



J. Groth  
1987

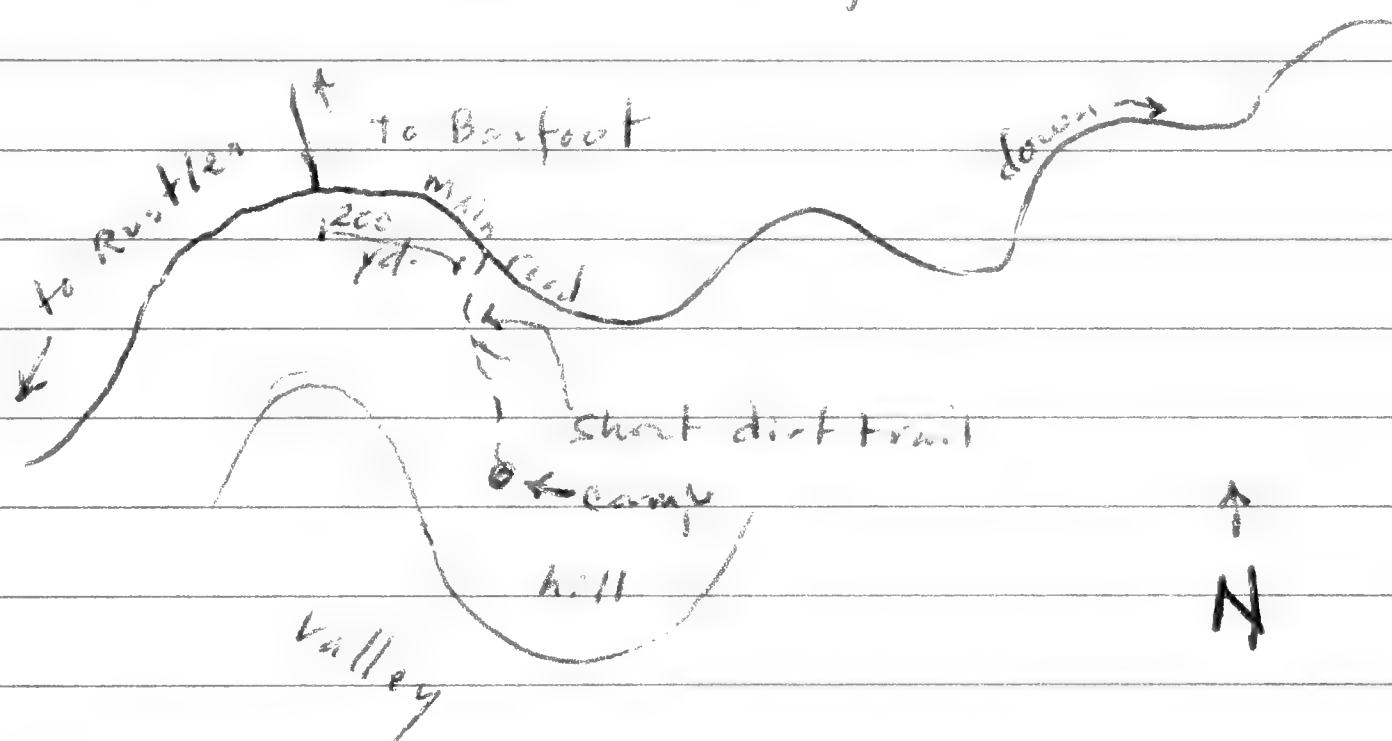
# Journal

154.

Barfoot Park, elev. 8200 ft, Chiricahua  
Mts. Cochise Co. Ariz

May 23 camping, most out with binoculars.

(contd) Quite a different scene from Thursday,  
the 21<sup>st</sup>! I drove down a short  
road off the main forest road.



I was basically alone here, but it  
wasn't long before family camper set  
up within yards of me. Well, I  
decided to just stay, record the  
new birds, & stuff skins here  
anyway.

I collected a female hepatic tanager,  
on the chance that it looked  
like a crossbill when I saw it.

Other birds here: red-shouldered hawk,  
hairy woodpecker, zone-tailed hawk,  
western wood pewee, western bluebird,  
the weather ended good, breezy with  
only a few clouds.





J. Groth  
1987

Journal

195.

Barfoot Park, elev. 8200 ft, Chiricahua  
Mts., Cochise Co., Ariz.

May 24 The morning weather was clear and cool,  
with only a slight breeze. I  
recorded and sacrificed 523 and 524  
who I kept overnight. I left  
after stuffing all of the birds except  
the two new ones, and drove down  
to Willcox, and got there about  
10:30 am and called home. I got  
gas and then drove up to the Pinaleno  
Mountains in Graham County, Arizona.  
The Drive, from 11:00 - mid about 1:00,  
was with clear weather in the desert  
with wisps of clouds over the  
mountains. The desert was blooming  
on the prickly pear and cholla cacti,  
and vines along the road were  
blooming. The road changed the  
habitat along the way. I took  
666 N to 366, and took this  
up into the mountains. At 5000  
ft there were oaks, then  
grading to ponderosa pine - Doug fir,  
with a short piñon gone. The  
ponderosa pine was mainly good  
with depleted cones, but the  
cones on these become sparser  
at higher elevations. The Doug fir



J. Broth  
1987

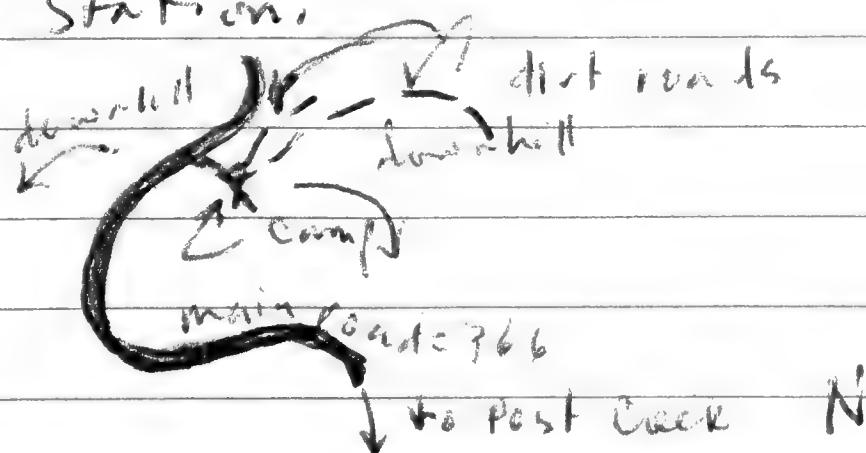
# Journal

156.

Pinaleno Mts., Graham Co., Arizona

May 24 had a very good, but depleted and dry,  
(cont'd) cone crop on the trees. I listened  
for crossbills on the way up, but  
heard none (but considering the time of  
day, this says nothing about their  
commence.) I stopped momentarily  
at several locations, including  
Shannon Camp, Holiday Park, and I  
also stayed at Treasure Park  
(at a small campsite near the  
stream) where I ate a lunch and  
washed up while the air was  
fairly warm. I thought I heard  
type 2 crossbills in the distance on  
several occasions, but the decoys  
never became excited, and the calls  
were very distant.

I then, at about 4:30, drove  
up the road from Treasure Park.  
I found a dirt road somewhere  
between Post Creek and Columbine  
Ranger Station.





J. Broth

## Journal

1987

1 1/2 mi. W Hawk Peak, elev. 9700 ft.,  
Pinaleno Mts., Graham Co., Arizona

May 24 This place, I set up camp. I heard  
 (cont'd) no crossbills during the late hours  
 of the day. The habitat here  
 was a partially-logged area of  
 dwarf fir, englemann spruce, ponderosa  
 pine, and other fir (white?). The  
 ponderosa, douglas, and englemann all  
 had old, depleted cones.

May 25 The night and dawn were very cold,  
 in the 30's and windy. I set up  
 a mist net at dawn, to the  
 chorus of hermit thrush, yellow-eyed  
juvies, robin, ruby-crowned kinglet,  
 and audubons warbler. Also here  
 were pygmy nuthatch, red-breasted  
nuthatch, hairy woodpecker, glicker,  
cedar waxwing, pine siskin, house  
wren.

A lone crossbill came in before  
 it was very light, I got brief  
 recordings of some song and calls of  
 the bird. Later, a large flock  
 (about 20) - all type 2's - flew  
 in, but did not stay long.  
 Later, I caught a pair (525 + 526)  
 and a threesome (527, 528, and  
 529). 529 had some seeds in



J. Bruth  
1987

# Journal

158.

1 1/2 mi. W. Hawk Peak, elev. 9700 ft,  
Pinaleño Mts., Graham Co., Arizona

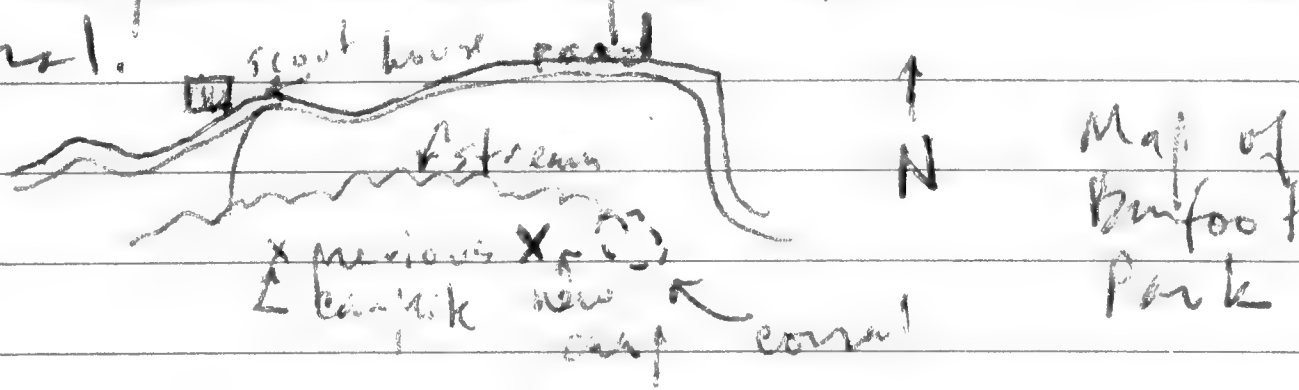
May 25 his camp -- I was able to ~~shoot~~ <sup>record</sup> him before  
(contd) ~~if he had been~~ <sup>he had been</sup>

Then a large  
flock came in again, and I caught  
5 of the birds (all of which were  
adult Type 2's), birds 530-534.  
Then, a lone ♂ came in, and I  
recorded and shot him (= 535).

While I was capturing 527-529,  
the sheriff came into my camp,  
explaining that a boy was lost in  
the woods somewhere. Another  
sheriff came into camp a little later.  
I recorded and took tissues on  
all 11 birds collected today. After  
skinning the birds, I drove to  
Willcox and got there at about  
8:30 pm, and stayed at a motel.

May 26 Drove back to Bufoot Park today.  
When I got there, I immediately  
heard Type 2 crossbills around.  
There were only a couple camping  
next to the Scout house.

Set up a camp next to the  
cove.







J. Broth  
1987

# Journal

159.

Barfoot Park, elev. 8200 ft., Chiricahua  
Mts., Cochise Co., Arizona

May 26 I decided to set up a net inside  
the corral, to keep cattle out of  
the way, since I knew there  
were two head around. About  
an hour later, a whole herd  
of about 15 head arrived, but  
none would jump the corral  
fence, so I was saved from  
total attention. Type 2 birds  
were around, and I collected  
a couple during the day. (See  
catalog). I also made numerous  
recordings.

Other birds: Greater Pewee, White-  
breasted Nuthatch, Brown Creeper (in  
net) zone-tailed hawk.

May 27 The weather continues clear, only  
slightly breezy. The cones have  
been falling off the Apache pines,  
but the crossbills use the ones  
that are on the trees. I  
recorded and collected birds again  
today, (see catalog and tapes)  
A threesome of birdwatchers came  
into camp (one from Massachusetts  
w/ a Nature Conservancy T-shirt) and  
a couple from Wisconsin who



J. Groth  
1987

# Journal

Barfoot Park, elev. 8200 ft, Chiricahua  
Mts., Cochise Co., Arizona

May 27 were staying at the Southwest Research  
(contd) Station. I stuffed skins most of  
the day.

May 28 The day broke as usual, with  
crossbills around the park. I  
repeatedly see an adult red  
male Type 2 feeding from 1-3  
juveniles. It appears to be the  
same male, since he always  
goes to water at the same  
place, with the juveniles in tow.  
I caught two birds this morning,  
one very orangish ♀ and another  
very red male. The male's  
mate (a ♀) was around, but  
I missed her (I think) after  
releasing her.

At about 1:00 pm, I decided  
to try the Itva chals again. I  
drove down to the creek  
and washed-up, then drove to  
Sierra Vista. It was a hot,  
(but only in the 80's) clear day,  
and I got to Carr Canyon Road  
at about 4:30 pm. It was  
still closed. I then decided  
to try the road up the backside



J. Groth  
1987

# Journal

161.

## Huachuca Mts., Arizona

May 28  
(cont'd) of the Huachuclas, past the  
Sunnyside Ranch. Up this road,  
the habitat graded from good  
grassland (with horned larks)  
to juniper-oak (few pinons)  
with Chihuahuan pine (old brown +  
new green cones) and finally  
Apache pine. None of the roads  
were open into the high country.  
The road to the Petersen Ranch  
(see USGS topo) was very bad  
and barely passable w/ low-range  
4WD, and did not go up high  
enough. I camped at the end  
of a road that was in a  
canyon here, but I'm not sure  
which canyon.

May 29 The morning broke clear and sunny. I  
made breakfast and stayed around the  
campsite until about 2 hrs past dawn,  
when I decided there would be no  
crossbill activity. I drove to  
Tucson, ~~got supplies~~, and from there  
drove up into the Santa Catalina  
mountains above Tucson. The weather  
was only slightly cloudy + hazy.  
The habitats went from Saguaro cactus



J. Broth  
1987

# Journal

162.

1 mi. S +  $\frac{1}{2}$  mi. E Summerhaven, elev. 8000 ft,  
Santa Catalina Mts., Pima Co., Arizona

May 29  
(cont'd) in the lowland hills to ponderosa pine/  
doug fir higher up. I found a  
good spot at the south edge of  
the road, on a rocky promontory  
at ft. elev. The name of  
the site was  
which was a National Forest Recreation  
Area. Here I listened for crossbills  
for the rest of the day. At  
about 2:00 pm, a lone Type 2  
bird (who I never saw) came into  
the calls of the decoys. I recorded  
this bird on tape.

No other crossbills were heard in  
the later part of the day. Yellow-  
eyed juncos were around the camp,  
and hermit thrushes and olive warblers  
were common.

May 30 I remained at this site until mid-  
day, when I drove into Tucson.  
Crossbills were heard on several occasions,  
each time only lone birds. Two  
of these came in to the decoys  
and were recorded and shot -- two  
lone females not in breeding condition  
and both Type 2. I went down  
to Tucson at mid-day and got





J. Groth  
1987

# Journal

163.

Arizona to New Mexico

May 30  
(cont'd)

~~underway~~  
food and noticed I was losing air from the left rear tire (slow leak). Got gas and air at Willcox, then drove to Silver City (got there at dusk) then drove up New Mexico highway #61 north out of Santa Rita. This road twisted and turned through a canyon (it was dark, I could not really see). When I got to what I thought was the top I turned off the road into the forested and camped.

May 31

At dawn, just at sunrise, I was awakened to the decays in the front seat calling loudly in response to wild birds. I got out and made some recordings -- good-sized flocks (5-25 birds) were around ... all apparently Type 2 by my ear. This looked like a poor area to set up a net -- nothing attractive for the birds -- so I drove N on 61 until I got to Meason Park (a cleared area



J. Groth

1987

# Journal

164.

Black Canyon,  $2\frac{1}{2}$  mi. N + 3 mi. E Santa Rita, elev. 7500 ft, Black Mts., New Mexico

May 31

(contd)

in the forest with a signpost.

Just past Meaton Park, another  $\frac{1}{2}$  mile up the road, a spring emptied into a concrete tub and trickled down the canyon. Here I set up a net right over the water, thinking the birds might come down here -- it was open and grassy in the canyon bottom. I heard some type 2's and recorded them, but only a little later caught a male-female pair, then I was able to record and shoot a lone male.

Since this was Sunday, I anticipated some weekend traffic on this road, and some trucks, jeeps, and a car drove by. I decided to go elsewhere at about 12:00 noon, so I drove N on 61, then E on 59 towards Truth or Consequences, NM. The drive on 61 went through some good piñon-juniper and ponderosa pine habitats -- very open and dry, with canyons and mesas. At the junction with 59 (westbound from 61)



J. Groth  
1987

Journal

165.

May 31  
(cont'd)

Poverty Creek,  $8\frac{1}{2}$  mi. N + 10 mi. W Chloride,  
elev. 7700 ft., Black Mts., Sierra Co., N.M.

The habitat was pure pine savanna with mostly ponderosa and some piñon pine. Generally the area was grazed by cattle. The cone crop on the ponderosa pine was of open and dropping cones, with barely any seeds (or am I wrong?). This area looked very pristine, in terms of its total amount of contact by humans.

I stopped in an area just about  $1\frac{1}{2}$  miles W of the continental divide signpost -- turned in off the main road, stopped, and then deerys heard a Type 2 lone bird, who came in and stopped (and also recorded) but not collected.

I then drove up to the sign for the continental divide, and turned into the forest here, where I found a heavily managed area just above and to the N of the highway 59.

I set up here, stringing out a mist net in the forest. No crossbills were heard in the late hours of the day. Great horned owl, whip-poor-will, night hawk.



J. Broth  
1987

# Journal

166.

Continental Divide on Hwy. 59, 8 1/2 mi NE 10 mi. W  
Chloride, elev. 7700 ft., Black Mts., Sierra Co., NM

May 31

(cont'd)

were heard in the evening. The weather was very good -- a few puffy clouds + mostly sun + clear skies.

June 1

The decoy crossbills who were in the cab of the truck over night began to call loudly at dawn, in response to calls of wild crossbills around.

I got them out and put them by the mist net and got the recorder and collecting gun ready. At first,

I had no luck catching birds, but a few groups of Type 2 birds were recorded, and later a group of 8 birds (5♂, 3♀) came in and went down to the decoys. I

netted 4 of the males; the remaining birds were giving flight calls and I shot them one by one, so I got the whole flock. All Type 2's

were in breeding condition, although they tended to be fat. After

skinning and tissueing all of the specimens, I drove on 59 to 52 going E towards Truth or

Consequences, New Mexico. The road went through more nice ponderosa pine, then went through a canyon





J. Broth  
1987

# Journal

167.

## Truth or Consequences to San Mateo Mts., NM

June 1 which opened up to piñon-juniper,  
(cont'd) finally to sagebrush and creosote  
in the lower valley at T & C.  
I stayed in a motel at T & C  
(the "Villa" - \$12 room - #1) next to  
a laundromat where I cleaned up the  
clothes, etc. The left rear tire  
was leaking slowly, so I bought  
a foot air pump at the Checker  
Auto. Also washed the truck at  
a spray-type car wash.

June 2 The morning at T & C was bright  
and sunny, and I left there at  
about 7:00 am to drive to the  
San Mateo mountains in Socorro  
County -- mainly just to hide away  
and stuff skins. I took the  
exit off of Interstate 25 that  
led to 52 going west, then  
turned right off of 52 to 142 N.  
At Monticello, New Mexico, I  
took the northbound road to the  
mountains. This road was poor  
and rocky, winding up canyons  
that were in juniper/sagebrush  
habitat. I got into ponderosa pine  
at about 7000 ft, and drove



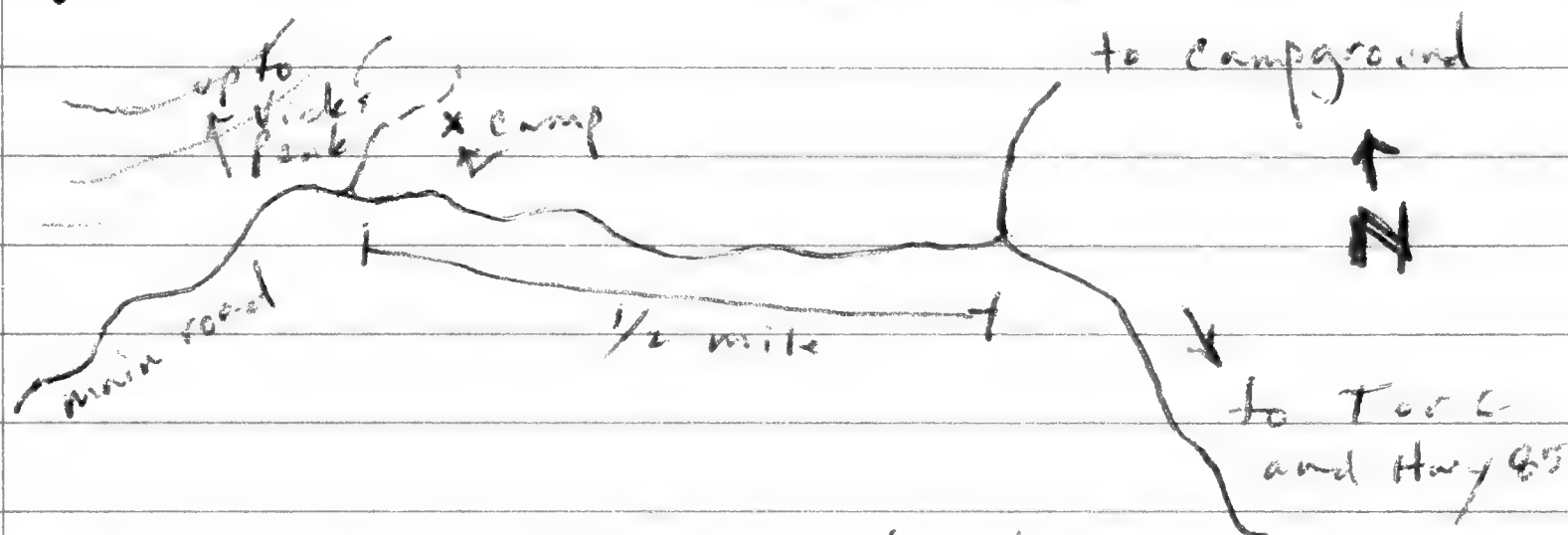
J. Groth  
1987

# Journal

168.

Base of Vides Peak,  $17\frac{1}{2}$  mi. N + 3 mi. E Monticello  
elev. 8000 ft. San Mateo Mts. Socorro Co. N Mex.

June 2 into the forest off the main road  
just beneath the main big peaks  
of these mountains.



this area was mixed doug fir/  
ponderosa pine and rare blue spruce.  
the ponderosa pine looked like else-  
where -- old cone crop. Not long  
after stopping, I heard Type 2  
crossbills flying nearby, and the decoys  
called. I got recordings of these  
birds. A male stayed near the  
camp and called and sang (on tape)  
and I shot him. It got fairly  
hot later in the day, but no  
large clouds. The steller's jays  
here made very unusual vocalizations,  
sort of a trucking sound. Whip-poor-  
wills called in the evening. This  
was a very quiet day -- no  
traffic at all went down the  
road through these mountains all day.



J. Broth  
1987

# Journal

169.

## New Mexico into Colorado

June 3 The morning was clear. Not many crossbills flew around the camp early in the morning, but one lone female came in, called, and was collected. Perhaps there was greater crossbill activity at higher elevations than the camp.

I left this area by about 10:00 am and drove out to the Interstate. This road went quickly out of the mountains, down some canyons, and connected to Hwy. 85, which I took N, then took the Interstate to Albuquerque. Got there about 1:00 pm, and went to visit my friend Terry Blain, a geologist I know from Wisconsin. Had a nice lunch prepared by his wife Debbie, talked, and then at about 3:00 pm I started N to Colorado. I went through Espanola, and took Hwy 285 N, then went W on 149 <sup>fork</sup> where it connects at South Fork, Colorado. I drove 149 Westward, and it began getting dark as I finally left the Rio Grande valley. It was pitch dark by the time



J. Groth  
1987

# Journal

Spring Creek Pass, elev. 11,000 ft, San  
Juan Mts., Hinsdale Co., Colorado

June 3 I got to the Clear Creek road,  
(cont'd) which I took w into the high  
mountains. This gravel road wound  
up to above treeline, I searched  
for a likely campsite, but the  
forest signs said no off-road  
travel was allowed. The road  
became a private road ("Cannon  
Road"), so I turned around and  
headed back toward Hwy. 149. I  
saw elk here. I turned left on  
149 and headed up toward Spring  
Creek Pass. The night was very  
clear, not too cold. At the  
very top of Spring Creek Pass I  
stopped at a small forest camp-  
ground where I stayed the night.  
I was the only camper. Little  
traffic went up or down 149 that  
night.

June 4 Dawn broke clear and sunny. Many  
crossbills and other birds were around  
the Pass. I set up a mist net  
with decoys (305 + 307), and I made  
many recordings of birds. Type 4  
Crossbills were first heard, then  
also quickly Type 2's and Type 5's.





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1987 Spring Creek Pass, elev. 11,000 ft., San  
Juan Mts., Hinsdale Co., Colorado

June 4 A small group of white-winged  
 (cont'd) crossbills stopped in the trees above  
 the camp. I shot a male, but  
 he hung up in the tree. I also  
 shot a small juvenile male bed  
crossbill, but did not certainly  
 record him prior to shooting (see  
 end of Tape 77B or beginning of 78A).  
 I am almost certain he was Type 4,  
 as I heard the calls. I then  
 caught two Type 4 birds (a ♂ and a ♀)  
 from a flock of about 8 Type 4's.  
 Many crossbills were around -- lots  
 of Type 2's and Type 5's, as well  
 as Type 4's -- all in about equal  
 frequency. Pine siskins followed the  
crossbills and were attracted to the  
 decoys and caged birds. Pine  
groshawks were heard, and a band  
 of gray jays were around. After  
 catching the first two birds, another  
 flock of Type 4's came in and  
 I got 4 birds -- one turned out  
 to be a Type 5 ♂ with very large  
 testes -- certainly in breeding condition.  
 The wild Type 2's I saw were  
 in large flocks of over 10 birds for



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Spring Creek Pass, elev. 11,000 ft, San  
 Juan Mts., Hinsdale Co., Colorado

June 4 the most part. The Type 5's were not  
 (cont'd) seen in flocks of more than five  
 individuals. I noted juvenile Type 4's  
 at juvenile Type 5's. The Engelmann  
 spruce here had a very good cone  
 crop, but brown, drying, and falling  
 to the ground - no doubt this  
 attracted the many crossbills and  
 siskins. I skinned and tissueed  
 the seven birds I got today. As  
 the day went on, the clouds  
 gathered and by 5:00 pm, it began  
 to rain. At 6:20, it was  
 drizzling and overcast here. The rain  
 was combined with thunder. As it  
 got dark, the rain eased up. The  
 night became fairly cold: below freezing.

June 5 Today I set out to stuff skins.  
 I did collect one adult male Type 4  
 bird who was recorded and then  
 shot. The weather during the  
 day started very cold: ice covering  
 everything from yesterday's rain.  
 It became cloudy, and did  
 drizzle some. I stuffed skins  
 and recorded some crossbills now.  
 Basically, it was the same story as



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# Journal

Spring Creek Pass, elev. 11,000 ft, San  
Juan Mtn, Hinsdale Co., Colorado

June 5  
(cont'd)

yesterday, with some fairly large  
(10-20 birds) flocks of type 2's -  
all apparently adults. Type 4's  
flew in groups of 5-8, with  
stripy birds evident: a group of  
3 juvenile Type 4's came into  
the campsite. Type 5's were  
common, but never in large groups  
(largest = 5, but mostly single  
birds). I saw one group of Type  
5's with juveniles. White-winged  
Crossbills were the least common,  
with singles, pairs, and groups of 3.  
The pine siskins here were very  
common and active. The males  
were in song. The song contained  
imitated elements of pine grosbeak,  
evening grosbeak, red crossbill, <sup>Type 4</sup> and  
white-winged crossbill. The pine  
grosbeak had an interesting song;  
the usual warble, plus an  
imitated "three-beers" just like  
an olive-sided flycatcher (also  
here, breeding down in the valley.)  
Other birds around: juncos,  
hermit thrush, robin, gray  
jay, raven (active), mountain



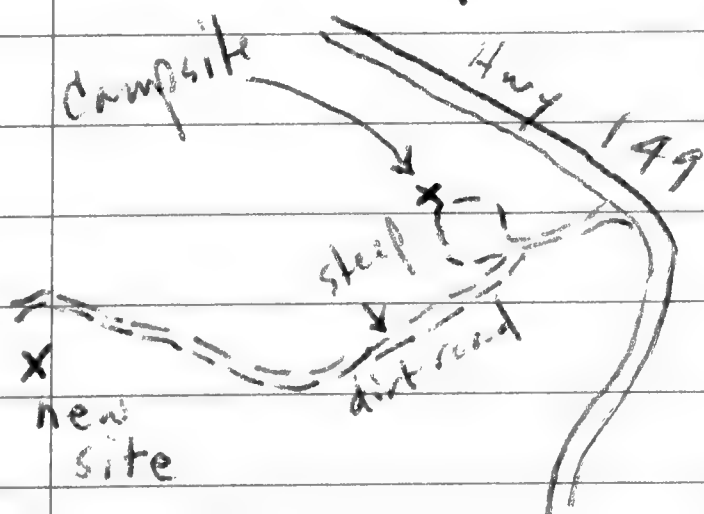
J. Guth  
1987

# Journal

Spring Creek Pass, elev 10,900 ft, San Juan  
Mts., Hinsdale Co, Colorado

June 5  
(cont'd) chickadee, white-crowned sparrow,  
red-breasted nuthatch (rare), brown-  
headed cowbird. I also recorded  
a Type 4 male crossbill as he sang  
a fairly long song right in the  
camp on a small tree.

June 6 Today I set out to get some  
more birds. The morning was not  
as cold as yesterday, but the  
sky was much cloudier and red  
with the dawn. Red crossbills  
flying over would not come down  
to the decoys. I made many  
recordings of birds, but most  
called in flight or from the top  
of tall engelman spruce -- fruitless  
to shoot them for they would  
not fall from the trees. I moved  
up the hill from the forest campsite  
to get a better netting locality.  
I tried up the hill:



↑  
N





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1987

# Journal

175.

Spring Creek Pass, elev. 11,100 ft., San  
Juan Mts., Hingdale Co., Colorado

June 6 Here at the new site I set up a net,  
(cont'd) and many crossbills passed over  
(including the 3 call types plus good  
numbers of white-wings) but I  
had little luck getting any to  
come down to the decoys. The  
decoys were now becoming 'blaze'  
and did not always call when  
crossbills flew over. I did  
manage to record and then capture  
a lone type 2 ♀ (not in breeding  
condition).

At about 11:30 I went up to  
Lake City. Heard no crossbills along  
the way. I drove 5 miles N of  
Lake City and stopped in the ponderosa  
pine/blue spruce along the river and  
heard a flock of Type 2's. I  
took a shower at the laundromat in  
town, then drove back to Spring  
Creek Pass.

I shot (after recording) a lone ♀  
white winged crossbill who was near  
breeding condition. Also, I  
collected a male pine grosbeak. I heard  
crossbills, but didn't get any  
(all 3 call types -- plus mostly type 2's)



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176.

1987

Spring Creek Pass, elev. 11,100 ft., San  
Juan Mts., Hinsdale Co., Colorado

June 6 (cont'd) A small amount of rain fell as the usual  
thunderstorms brewed across the high  
Country. I now camped at about  
11,100 ft., above the forest composite.  
The dirt road that I was  
camped on was closed by snow,  
which occurred in patches.

June 7 Clouds continued to dominate the weather  
here, but the morning was not as  
cold as past days. Red crossbills  
continued very common. I captured  
a ♀ who was with a ♂ -- the  
♂ was shot after recording (both  
Type 4's -- 567 + 568. No luck  
catching others or seeing them down.  
I was startled by the calls of a  
white-winged crossbill who was attacking  
two gray jays. The gray jays  
retreated, with the white-wing close  
behind. With this opportunity (this  
was right in the camp) I shot  
the male white-wing. I did not  
see at first that he was defending  
a juvenile. After I shot the ♂,  
the juvenile was seen on the  
ground begging to bird 567 who  
was in a cage on the ground in camp.



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1987

Spring Creek Pass, elev. 11,100 ft., San  
Juan Mts., Hinsdale Co., Colorado

June 7  
 (cont'd)

A good series of begging calls from  
 this juvenile has been recorded.

I captured the juvenile by hand  
 and killed it for the specimen.

I drove into Lake City again  
 today to call home. I got there  
 late in the afternoon. It was  
 cloudy and drizzling, and by the  
 time I made the phone call it  
 was raining.

I returned to Spring Creek Pass  
 after the call. I camped further  
 up the road, at about 11,200 ft  
 at the edge of a clearing/meadow.

June 8

I set up a net near a patch  
 of snow and a dead tree in  
 the southern edge of the meadow.  
 No luck at first, but then by  
 a great bit of good fortune I  
 caught a Type 5 male (did not see  
 him get captured). Not long after,  
 (maybe 1/2 hour) a lone ♀ Type 5  
 came in and was only interested  
 in 569. She (#571) had an  
 active brood patch and ovary,  
 so I wonder if she was 569's  
 mate [see sonogram for call-matching]



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# Journal

Spring Creek Pass, elev. 11,100 ft, San  
Juan Mts., Hinsdale Co, Colorado

June 8  
(cont'd)

A short while later, and while 571 was still in the net, I caught another type 5 ♂ (bird 572). I had no luck luring-in any other crossbills. The weather turned to wind and rain, so I put the three captives (305, 387, and 569) under the trees near the camp. Bird 569 seemed cold and wet.

Some young guys from Lubbock, Texas were camped very near me in the forest, and I walked over to their camp in the evening for a beer. I kept bird 569 overnight to use as a decoy the next day.

The weather turned to strong rain by sundown, and rain continued strongly through the night.

June 9

By morning the rain had eased some. I set up the nets and put out the birds. At first, I recorded many birds (crossbills) passing over, but none came down to the decoys. Bird 569 called a little, but weakly. From a larger group (about 10) Type 2's a





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# Journal

Spring Creek Pass, elev. 11,100 ft, San  
Juan Mts, Hinsdale Co, Colorado

June 9  
(cont'd)

One individual noticed the decoys,  
called some prior to capture (see  
Tape) and was captured -- a  
juvenile Type 2. I was then able  
to capture a couple of females -- birds  
575 and 576 -- and prepare them as  
specimens.

After preparing these two females,  
a huge horde of crossbills began  
to accumulate around the camp in  
the nearby forest. These crossbills  
were composed of Type 2, Type 4, and  
Type 5 birds as well as white-  
wings. I estimate the group was  
30% type 5's, 30% Type 4's, 30%  
Type 2's, and 10% white-wings.

Siskins and chickadees also congregated  
with the flock. Birds cavorted  
in aspen tops (which were just  
unfurling here) and also the tops  
of the spruces. I observed  
birds going to the ground and picking  
at things; including especially  
around the snowbanks. I walked  
among the birds, but did not  
collect any. It seemed like birds  
of the same call type interacted



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# Journal

180.

Spring Creek Pass, elev. 11,100 ft, San  
Juan Mts., Hinsdale Co., Colorado

June 9  
(cont'd)

with each other more frequently than  
at random, but mixing was extensive.

Cones fell from the treetops as  
usual. The total number must

have been about 100 crossbills.

After about 25 min the group moved  
off, to the S. However, smaller

numbers of crossbills were around  
later, and it was almost never

totally quiet in the area as  
distant calling of crossbills was  
nearly constant.

I found two very small type 5  
birds together in the net after  
my walk among the wild horde.  
These were recaptured at killnet within  
2 h. After this, I wrapped up the

camp. The weather began to  
clear at this time. By afternoon  
it was warm with good amounts  
of sunshine. I drove about 1/4 mi.

from the campsite to the camp of  
June 6, where I sat and stuffed  
skins. Flocks of type 4's and

white wings were around, and a  
lone ♀ became interested in the  
captives (305 and 387) who were on



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# Journal

Spring Creek Pass, Colorado to  
Nevada County, California

June 9 the ground, in the shade, by the truck.  
(cont'd) She came down, I reloaded and  
shot her (bird 579).

In the late afternoon I drove from  
Spring Creek Pass to Lake City and  
N on 149 to the junction with Hwy 50,  
which I took W. I drove to  
Grand Junction and stayed at a  
motel.

June 10 I remained at the motel in Grand  
Junction until about 11 am, when I  
finished stuffing all of the skins  
I had. From there, I drove W  
on Interstate 70 through Utah  
and into Nevada, where I continued  
on Hwy 50 towards Reno. The  
weather was sunny, but mountains  
had significant clouds and probably  
rain. By evening I was driving  
through the Toiyabe Range area where  
it was raining and I had good  
views of a magnificent lightning  
storm. I stopped to catch a  
nap under the full moon around  
Frenchman, Nevada.

June 11 I started driving again before  
sunrise, and it was 6:00 am when



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182.

Sagehen Creek Field Station, elev. 6400 ft,  
3 mi. NW Hobart Mills, Nevada Co., Calif.

June 11

(cont'd)

I drove through Reno. I then went into California and went to my old site at the "crossroads" near the Sagehen Creek Field Station. I soon encountered a pair of Type 2 birds and collected them. Later, a flock of 8 Type 2's came around but I could not record an individual and shoot it. (I did not have a net set up). The flock took off after about 45 min, but meanwhile I did some recording and also watched birds forage. Foraging seemed strictly on old lodgepole pine cones, and some cones fell off the trees as the birds moved around. None of these were striped juveniles. About  $\frac{1}{2}$  hour later, a lone male came in, sang and called, and was then shot at close range.

The day was sunny, and it began to get hot by noon. I packed-up and left by noon and drove to Berkeley. Arrived at Berkeley around 4:00 pm. Mileage on truck = 52795.





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1987

journal

183.

Eastern Trip, California to Montana

July 8 Mileage on truck = 53280. Drove from Berkeley at around 9:00 am E on I80 to Wells, Nevada. From Wells, I went N on Hwy. 93 to Idaho Springs, where I picked up I86 to Pocatello, Idaho. At Idaho Falls, I went N on Hwy 20 to West Yellowstone. I pulled-off and slept just N of Ashton, in the beginning of the Targhee Nat'l Forest.

July 9 I woke w/ dawn. Cool, partly cloudy. This is a lodgepole pine savanna habitat, but I heard no crossbills in the few minutes I stayed at this locality. Dark rain clouds to the N over Yellowstone. I went into the Park at West Yellowstone, then went E to Madison, then Norris, Canyon, Tower, and out at Silver Gate, Montana. I saw many elk, a buffalo, and heard a Type 5 crossbill at a wayside near Tower. The weather was intermittent rain and a cover of dark clouds. By about 7:00 am I made it to Cooke City, Montana, where there are some forest roads going up into the mountains. I drove up these



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1987

# journal

184.

## Eastern trip, Montana to North Dakota

July 9 to look around and possibly collect  
(contd) crossbills for a few days. However,  
the cone crop on the Engelmann spruce  
was poor, and lodgepole was not  
common here. It was raining,  
and I stopped at a high point  
above the highway to rest. Here  
I saw pine siskins, pine grosbeaks,  
chipping sparrows -- but no crossbills.  
I left here later in the morning,  
as it did not seem like a good  
place for crossbill research. Yellowstone  
itself looked like good Type 5 habitat  
with lodgepole as the primary forest  
tree. I continued E on Hwy. 212  
over the high passes (Colter to  
Beartooth) and down to Red Lodge,  
Montana. It was storming from  
here through Billings. I then got  
onto I 94 and drove into North  
Dakota, where I slept at a  
wayside between Dickinson and  
Bismarck.

July 10 Drove E on I 94 to Fargo, North  
Dakota, and then continued E on  
Minnesota Hwy 10. to Detroit Lakes,  
where I continued E on Hwy. 34 to



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# Journal

185.

## Eastern Trip, North Dakota to Minnesota

July 10 Walker, Minnesota. In this area the

(cont'd) forest was mixed, somewhat open, hardwoods and white pine, white spruce, tamarack, and jack pine -- all with good cone crops, but becoming poorer further E. The black spruce had no

cones, as this tree became more common eastward and northward. I did

not stop, as I assumed things would get "better" more NE. I took Hwy.

371 N from Walker, then took Hwy 2 E to Grand Rapids. I then got on Hwy. 169 E to Virginia, then to Ely. Conifers became scarcer, the cone crops poorer.

At Ely I headed SE on Hwy. 1 to Lake Superior. The forest here was intermittent in terms of tree size and species -- heavily logged and managed -- mostly black spruce and aspen and white birch. No cones here, and the white pines (of which there were few) were barren of cones.

I drove N to Grand Marais, but no improvement in forest type by crossbill standards. I then went back S and slept at a shoreline wayside.



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journal

186.

Eastern trip, Minnesota to Michigan

July 11 I got up and drove through the rain to Duluth, Minn., and then E on Hwy 2 through northern Wisconsin to Wakefield, Michigan. The truck has been "lurching" since about Reno, Nevada, and is getting worse -- have not found the problem -- idles fine, but no power on some uphill climbs. This whole area seems poor for crossbills -- mostly deciduous trees and no cones on the few conifers. I then went E on Hwy. 28 to Kenton, Michigan, where I turned N on a forest road (paved) and drove through the forest to Hwy. 38. I stopped at a low, boggy area about  $\frac{1}{3}$  of the way. Here I heard evening grosbeaks, but no crossbills -- and the black spruce and tamarack here had no cones. It was intermittently raining with a very dark sky, but not much wind. Once I got to Hwy 38 I went E to L'Anse, where I drove part of the way N toward Skanee. I turned in at the L'Anse ballfield and discovered that the truck's differential oil was very low,





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journal

187.

Eastern Trip, Michigan

July 11 So I went back to L'Ance and got  
(cont'd) some oil at a gas station. This seemed  
to do the trick, and the truck  
behaved properly. I went S to  
Ishpeming on Hwy 41, then continued  
E on Hwy 28 past Marquette. It  
was about 3 hr. to sundown, and  
the rain was briefly easing, when I  
got to a wayside right on the  
shoreline just about 1 mi. W of  
Au Train. I got the birds (decoys 305  
and 387) out of the truck and put  
them on the ground just above the  
beach. Here was a dunes-like  
strip of sandy soil and small  
jack-pines and red pines. Evening  
crossbeaks flew overhead often, exciting  
the decoys. A flock of 6 Type 2  
crossbills then came in response to  
the decoys, and I recorded the  
birds on tape 80. Some or most of  
the flock were striped juveniles,  
and at least one red bird was seen.  
I then decided to camp near here.  
I found a secluded place just E of  
the wayside, in a dunes-type habitat  
of the above-mentioned trees.



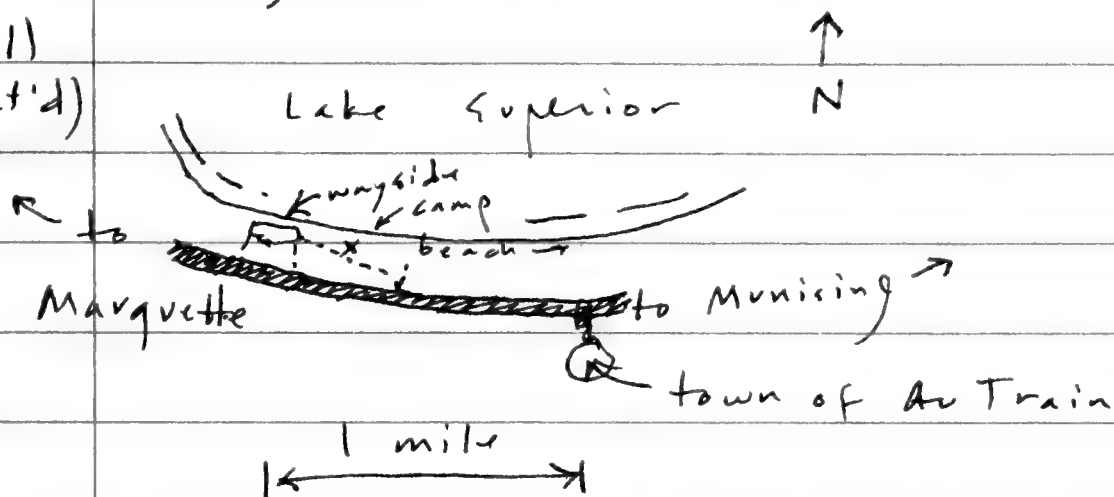
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# journal

188.

1 mi. W AuTrain, elev. 650 ft., Alger Co.,  
Michigan

July 11  
(cont'd)



I drove onto the dunes just above the beach and camped. There were no people here -- a secret little spot in the middle of much activity. Some kids walked up the beach but could not see me above the first rise of dunes. Heard no other crossbills that night. Chipping sparrows and hermit thrushes, night hawks, sharp-shinned hawks (nesting very near).

July 12 It rained in the very early morning (around 3 am) then subsided until about 6 am. I had nets set up and decoys out at dawn -- but no crossbills. I thought I heard a white-winged crossbill fly over. Evening grosbeaks and cedar waxwings commonly flew over. Later, after a downpour, I thought sure I heard a type 2 crossbill -- but it may have



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journal

189.

1 mi. W Au Train, elev. 650 ft., Alger Co.,  
Michigan

July 12 (cont'd) been an evening grosbeak. I bathed in the Lake, then another downpour of rain. After this second downpour, it briefly cleared and became very hot and muggy. The biting flies were very bad and swarming -- with no relief for me as they bit right through my "jungle juice" from REI coop. And no crossbills. I caught a ♀ purple finch and released her. Living became unbearable for me, with looming rain and bad bugs, so I drove into Munizing to get some "Yard Guard" insect fogger. I called home to Debbie here. I got back to the campsite at about 1:30 pm (eastern time) and it soon began to rain again. This rain was more of a steady, slow rain, with more wind and temps about 15° F cooler -- into the 60's. I left the decoys in the truck. The rain ended at about 5 pm, and it got sunny and hot. I set up the screen house <sup>and a mist net</sup>, then took a swim in the Lake. More evening grosbeaks and very rare pine siskins. It became partly cloudy by evening.



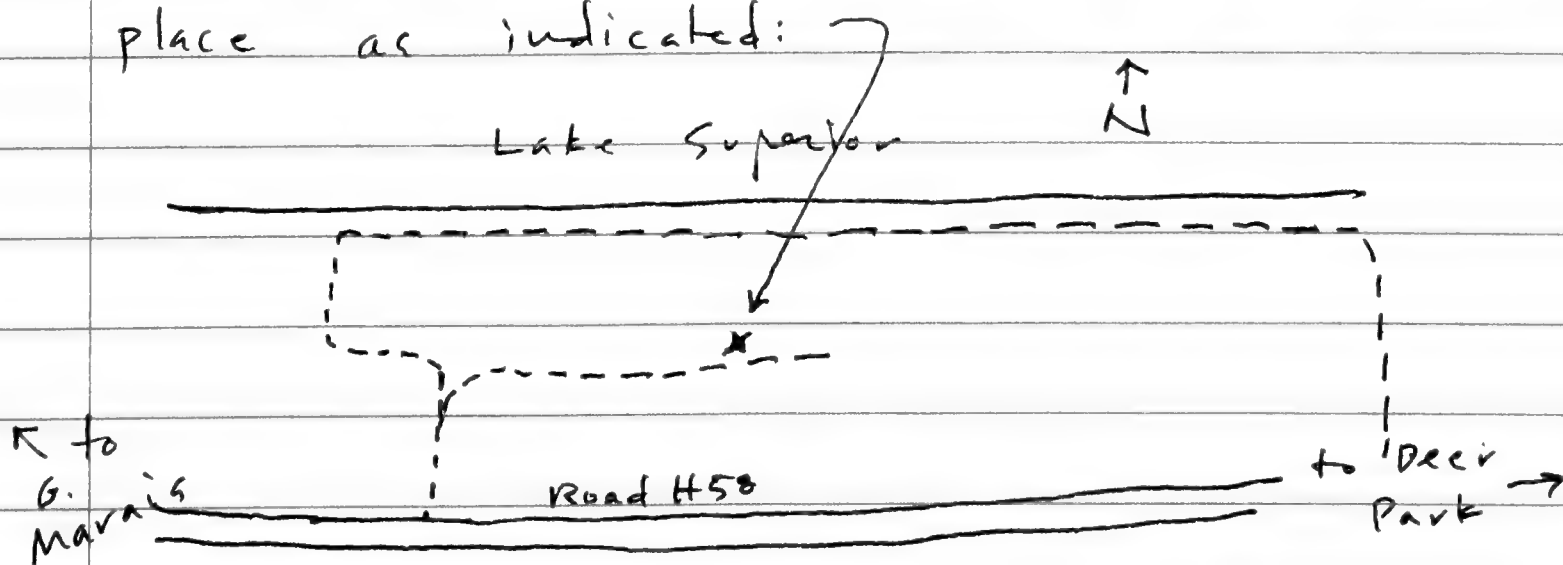
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journal

190.

1 mi. W Au Train, elev 650 ft., Alger Co.,  
Michigan

July 13 The morning was extremely windy. Dark clouds, intermittent drizzle, and a strong and steady N wind coming off the Lake. I heard no grosbeaks or other finches -- the wind noise was strong. The screen house had blown down over the night. I decided this would be a poor day to find crossbills here, so I decided to search for other good areas. I drove E on Hwy. 28 to Seney, then N to Grand Marais. The cone crops appeared poor (non-existent) on all conifer species, except a rare white pine or two with new cones. At Grand Marais, I drove E toward Deer Park. I turned off the main road (H58) at a point about 1 1/2 mi. E of the point where the pavement ended and I explored a dunes-like area of red pine / jack pine laced with dirt roads (sand). I stopped at a place as indicated:







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journal

191.

5 mi. E + 1 mi. N Grand Marais, Luce Co.,  
elev. 650 ft, Michigan

July 13 (cont'd) The wind continued very strong, from the NW. I heard evening grosbeaks and cedar waxwings flying over (both would excite the decoys), and juncos + robins were common. By evening the clouds thinned slightly.

July 14 At dawn, the clouds were thick, and it had drizzled overnight. Temps were in the upper 40's - cold. And it was breezy. Set up the net + decoys, and at about 7:00 am I thought I heard a crossbill, perhaps Type 3 or Type 4. At 7:25, a lone bird came in, and I recorded it in calls, toops, and song on tape 80. It was a Type 3 male, in yellow plumage and heavy fat. No crossbills were heard until 10:45 am, when a flock flew over. I am not sure, but I think there were about 12 birds in the flock; 3 of the birds stayed for the decoys, went down, and were caught. The others (if those were crossbills??) flew on, to the ENE. I numbered these 3 birds 584-586, with 586 pre-recorded on mid tape 80A. These 3 birds were very small, Type 3's in calls. Bird 584 = ♀, bird 585 = reddish ♂.



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# Journal

192.

6 mi. E Grand Marais, elev. 650 ft., Luce Co., Michigan

July 14 Bird 586 was a yellow ♂. At this (cont'd) time, the clouds were thinning slightly, but it was still very breezy and cool-- around 50° F. By 12:45 pm, it had warmed to about 60°, but mostly cloudy (some sun). No crossbills heard. I recorded and prepped the new birds. By 6:00 pm, the clouds were intermittent; temps in the 60° ±; no crossbills heard. Large group of evening grosbeaks <sup>-with juveniles - all yellow</sup> came around the camp. Also saw black-capped chickadees, red-breasted nuthatches, yellow-rumped <sup>-juveniles</sup> warblers, chipping <sup>-juveniles</sup> sparrows, purple finches, pine siskin (rare), crow, sandhill crane <sup>(calls)</sup>, loon (calling from S), blue jay, solitary vireo, cedar waxwing, junco <sup>-juveniles</sup>, and an und'id Empidonax. At about 7:00 pm I thought I heard a crossbill greeting song "pit-pit toowee-toowee" but saw nothing (decoys did call). Then, at 7:40 pm I heard Type 4 calls from the S -- two birds came in, got caught -- both juveniles w/ no red -- look like ♀'s. These were birds 587 and 588. No other crossbills were heard that evening. By dusk, the sky was completely clear and the wind was dying. Night hawks called.

July 15 The morning was cold (~40°) and calm, with



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Journal

193.

July 15  
(cont'd)

only a few high cirrus clouds. Many evening grosbeaks were around - also least flycatcher, e. woopee-wee, and a hairy woodpecker. At 7:30  $\pm$  am, I saw a flock of 6 Type 2's fly toward the net as I was away from camp about 200 yds. When I got to camp, I noted about 9 crossbills, some in the net. I caged 4 birds, then a 5th. Some called like type 4's.

I shot a ♀ Type 2 who called on tape.

I then recorded a little bit of song from a juvenile ♂ Type 4. Notes on identity: 3 in cage together = 589, 590, 591; lone juv. in cage = 592, lone ♂ in cage = 593; shot ♀ = 594, lone ♀, (bottom of net) = 595; singing juv = 596.

Then, as I was about to shoot still a 9th bird (juv Type 4), a small flock of Type 4's came around. I caught all but an ad. ♂ Type 4, who flew off to the W, and then I released 5 Type 4 juveniles (all heard upon release) since I had a good quota for awhile. I shot a ♂ Type 4 bird, who was with the other type 4's, and probably the mate of the ♀.

I could not get him down from the top of the tree. During the course of the afternoon, I observed and



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# Journal

194.

6 mi E. Grant Marsh, elev. 650 ft., Luce Co., Michigan

July 15 (cont'd) recorded some Type 4 juveniles, probably the ones I had released before, as these seemed trap-shy. By evening the sky became clear. Temps at night around 40-45°.

July 16 The morning was breezy and about 40°, with a few high clouds. A Type 4 crossbill was heard early, and recorded and collected -- a juvenile. Slightly later a flock of 3 Type 2's came in and were captured (#'s 598-600 on tape). As I was preparing specimens, I caught and released two Type 4 juveniles -- apparently a ♂ and ♀, and I did not measure these. Also, a Type 2 lone ♂ came in, was recorded, but not collected. During the morning, on several occasions I heard lone white-winged crossbills and at about 10:00 saw a flock of 10, and then at about 2:00 I saw a flock of about 30; they all flew right over the clear cut of the camp. Late in the day, the wind increased to strong gusts, with intermittent clouds -- very high clouds. The Type 4 ♂ collected yesterday fell out of the





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195.

6 mi E. Grand Marais, elev. 650 ft., Luce Co., Michigan

July 16 (cont'd) Treetop. I prepared this specimen without tissues, as JGG 512. Purple finches have been common at this locality, as well as evening grosbeaks. Pine siskins have been scarce, unlike western localities. I have several times seen kestrels attacking red-tailed hawks high in the sky. I saw a pair of croaking great-blue herons fly over today. Juvenile juncos, yellow-rumped warblers, and chipping sparrows are the common birds in the net. I have seen few, if any, adult juncos - and caught none. Robins are very common. Flickers and hairy woodpeckers are uncommon. Cedar waxwings common. B-c. chickadees + r.b. nuthatches are common. Least flycatcher, olive-sided flycatcher, eastern w-wreath are uncommon.

July 17 The morning was warm and windy. A lone juvenile Type 4 bird came in to the decoys, but was not collected (recording only). I remained at the camp all morning, seeing no other red crossbills (lone white-wing fly-overs)



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196.

6 mi. E Grand Marais, elev. 650 ft. Luce Co.,  
Michigan, then to Ohio

July 17  
(cont'd) and I heard the calls of a distant Type 3 bird. At about 9:30 am, a pair of gray jays came near the camp, but did not forage near here or act curious about the camp -- just flew off suddenly. I then packed and left, driving E toward Deer Park, Michigan. Along the main road, pines were mainly jack, along w/ red and white, with spruces and larches in the boggy sites. There appeared to be management for red pine in many places, with seed trees left. Also were some white-pines, - only a few w/ green cones -- none with old cones (or rare). The red pine was an available food source -- and it's all I saw the crossbills use while they were in the area around the camp. I explored the area around the road between Grand Marais and Newberry -- this looks like good red crossbill habitat -- sandy soil, lots of conifers. The jack pine is probably not used by the red crossbills. From Newberry, I drove S to Toledo, Ohio, and then to a point



J. G. Roth  
1987

~~to 6000 ft~~  
Journal

197.

Eastern trip, Ohio to New York

July 17 about 50 mi. E of Pennsylvania, where  
(cont'd) I slept at a wayside. The weather  
was becoming cloudy, and the air  
was very hot (90's) and humid. There  
was forecast thunderstorms for the  
whole of Michigan and then also for  
New York.

July 18 Today I drove to the Adirondack Park  
of New York. The air was very hot  
all day, with impending rain. While  
I made the drive, the weather was  
hot and sunny. I got to the  
park boundary at about 1:00 pm. I  
had "bad feelings" as soon as I got  
into New York. Too many people. Of  
course, it was Saturday, but there  
seemed to be no place to just  
explore for birds without cars and  
people driving fast. I entered  
Adirondack Park at Hwy 8, drove NE  
toward Speculator, New York, and then N  
on Hwy 30. Much of the area  
was hardwood forest, but mixed  
and patchy, with pines along the  
roadway -- planted -- and the white-  
pine here was not producing much  
this year and had apparently not



J. Groth  
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journal

198.

Eastern Trip - Adirondack Mts., New York

July 19 produced cones last year. only 1 tree  
(cont'd) in 50 had cones -- green and unripe.

The balsam fir had some new cones  
on some trees. Hemlock had mainly  
old, ripe cones. I searched all

afternoon and evening in Adirondack  
Park looking for good areas for  
crossbills or places to work and  
camp undisturbed. I stopped for

about 1 hour at a small man-  
made lake nr. Haselton (between 3-4pm)  
and heard no crossbills. Rare pine  
siskins -- one flew over. I drove

all around the Saranac Lake - Lake  
Placid area, including a side trip

up the Jay Mts. (mostly hardwoods)  
and up past North Pole to Franklin  
Falls (I did not pay the toll to go up

Whiteface Mtn.) and up Hwy 3 toward  
Malone. the truck "lurched" again,  
like it had between Reno and L'Ause.

I checked the differential oil, and it  
was full. I finally pulled to

the side of the road on Riverside  
Drive, which is about 3mi. <sup>E</sup> from

Lake Placid along Hwy. 86, then goes  
S along the river.





J. Groth  
1987

# journal

199.

Adirondack Mts., New York

July 19  
(cont'd)

The morning contained high clouds + - and the ground and foliage were wet from the night's rain. It had rained beginning at about 8:00 pm, then was off + on all night. At dawn, I heard songs of white-winged crossbills from the big firs + hemlocks around the water's edge. Numerous males sang here. I also saw an osprey try for a fish only a few meters away. yellow-bellied sapsuckers were right above the truck, ~~but~~ I was right next to the road, and did not want to collect birds here, so I drove to a different spot to look for red crossbills. I found a gravel road going into "Connelly Pond" which was just N and E from where I had spent the night. Here more white-winged crossbills sang from the tree tops, and I recorded one. I played back the recordings of the bird and got him within range and collected him as JGG 513. I then went to Saranac Lake and got breakfast at a Burger King, then decided to explore for red crossbills.



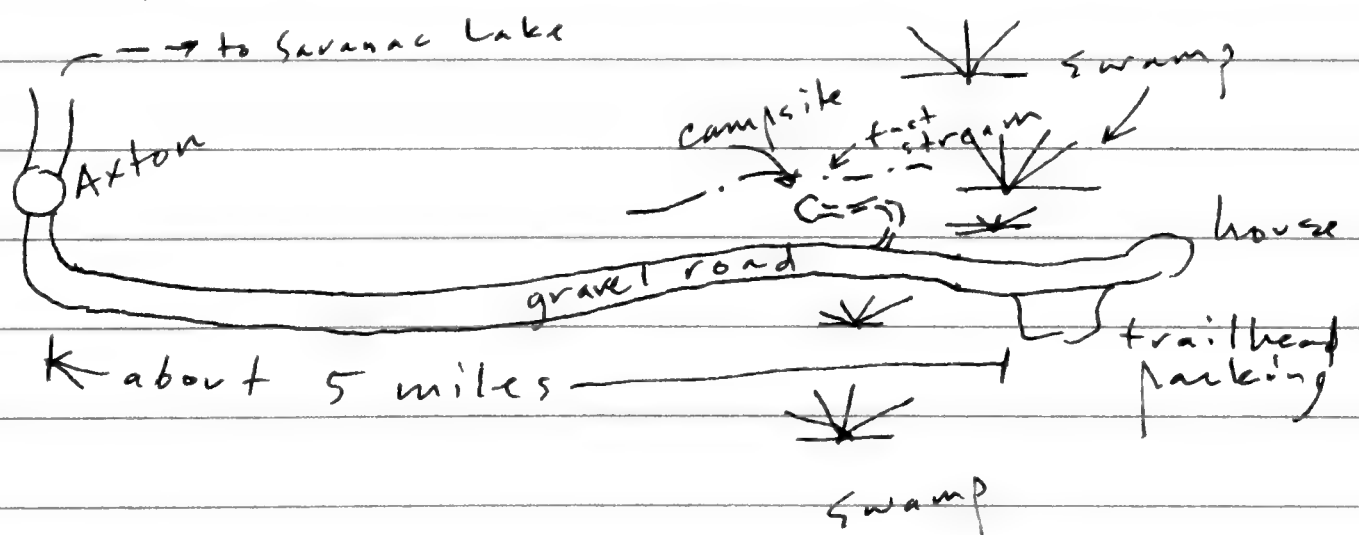
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# journal

200.

## Adirondack Mts., New York

July 19 I drove W out of town on Hwy 3,  
(cont'd) then took a secondary road S to  
Axton - a boat landing. This  
road became a gravel road and  
followed up a hill from Appersand  
River. I drove this until I got  
to a crossing, where it was a swamp  
of fir and larch with white cedar.  
Here I saw and heard more  
white-winged crossbills, with males  
apparently "holding territories" nearby.  
I stayed the afternoon at a small  
turn-off here:



I heard no red crossbills here. Evening  
grosbeaks frequently flew over (and  
were common throughout the Adirondacks)  
and occasionally excited the decoys. I  
left and slowly travelled back to  
the main highway. From there, I  
drove into Malone, New York, and got



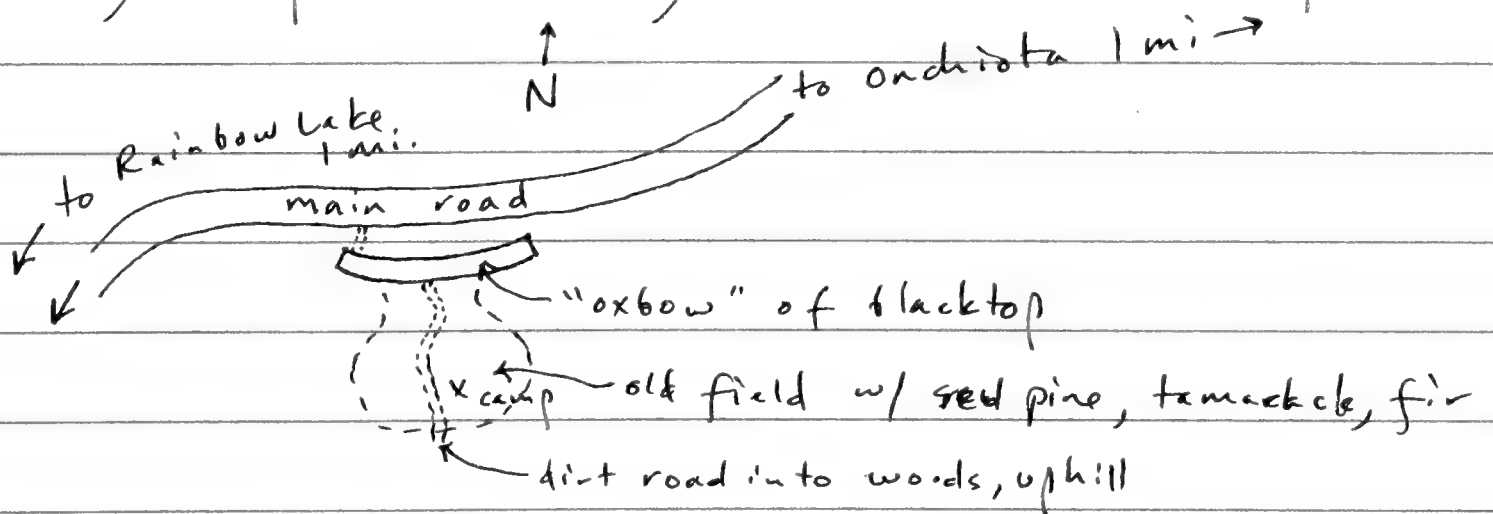
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1987

journal

201.

Adirondack Mts., New York

July 19 groceries and had a late dinner. Before I  
(cont'd) got there, I stopped at a place about  
20 mi S of Malone, NY, right along the  
Salmon River, where I saw 2 white-winged  
crossbills on the road where they flew  
up in front of the truck as I drove  
along. I stopped here and collected  
a yellow-bellied sapsucker for Ned Johnson:  
it was an immature ♂, testes 1 mm, no  
fat. After Montrose, I drove back into  
the Adirondacks (at night, while dark) and  
found a place to hide and camp between  
Rainbow Lake and Onchiota, New York, at  
a high point along the road: map:



July 20 At dawn, it was raining off and on, rather  
hard. There were numerous white-winged  
crossbills here, "holding territories" by singing,  
wing fluttering in flight, and chasing in  
flight. By now, the decoys became  
less and less excited by the white-  
wings, and 387 was consistently more



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202.

Adirondack Mts. to New Hampshire

July 20 excited (called more) for fly-overs of evening  
(cont'd) crossbills, while 305 called more than  
387 for anything else, especially pine  
siskins. I stayed here with the  
decoys out for about 2 hr. -- no  
sign of red crossbills. I then drove  
N and E along Hwy 3 to Plattsburg. The  
cones on the white pines became slightly  
more numerous in this region, but still  
very young and green. After Plattsburg,  
I took a ferry boat to Vermont  
(cost: \$6.25) to Pearl, Vermont, where  
I took Hwy. 2 to Burlington, and then  
took Interstate 89 E to Montpelier and  
Barre, Vermont. At Barre, I continued  
E on Hwy. 302, stopping at Groton,  
Vermont, where I called Julie Smith  
about her forwarding my maps to  
Canada. She had sent them the  
previous Monday (to Bangor, ME, post office).  
The weather all day had been cloudy  
and drizzly, with strong rain in  
patches. The forests here had  
white pine as a potential food source  
for red crossbills, but only young,  
green cones. I drove E into New  
Hampshire at Woodsville, then took





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203.

New Hampshire, Eastern Trip

July 20 Hwy 112 to Swiftwater and then into  
(cont'd) the White Mountain National Forest, up  
the "Kancamagus Highway". After the  
junction with Interstate 93, I continued  
E on 112. Here it was a major tourist  
area, and even though it was  
raining hard, there were many  
people, cars, and bikes around. And  
the red spruce, which was common  
at higher elevations ( $>1500$  ft.) had  
no old or young cones. All of the  
dirt side roads here were closed  
with "restricted" signs and metal  
gates. I tried to find some public  
land on which to work and camp,  
but was unsuccessful. I drove N  
off of 112 at Bear Notch Road, which  
connected to Hwy 302 at Bartlett, NH.  
Here I drove N to Bretton Woods, NH,  
where I drove N to the entrance  
to the railroad cog that goes up  
Mt. Washington. Just about 2 mi. before  
the gate to this railway, I took  
a gravel forest road up and over  
"Jefferson Notch". Here I found fewer  
people, but generally no access to  
the forest by truck off of this



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204.

Eastern Trip - New Hampshire to Maine

July 20 road. The forest here was very dense,  
(cont'd) mostly deciduous with red spruce  
and balsam fir -- and no cones. This  
looked very poor for red crossbills.

I decided to leave New Hampshire, for  
reasons mainly of lack of places to  
work. Also, I did not feel red  
crossbills, if any, would be breeding  
here. I then drove E on Hwy 2 to  
Maine. After about the Maine border,  
the cones on the white pines became  
better. All through the area between  
here and Bangor was a potentially  
very good white pine cone crop, but  
young and green. I had given the  
decoys 387 and 305 each a few of  
these cones, but they were not  
interested in them. I drove through  
the evening to Bangor, Maine, through  
rain, drizzle, but not bad wind.  
The truck "lurched" most all day.

I stayed at a "Scottish Inn" in Bangor  
(30.00 single -- a good place).

July 21. The morning in Bangor was cloudy and  
drizzly. I went into town at  
about 8:30 am, and picked up my  
maps at the post office, then did



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205.

Eastern Trip, Maine to New Brunswick

July 21 laundry and had breakfast at a "Dunkin  
(cont'd) Donuts". After this, I drove NE on  
the Interstate 95 to New Brunswick,  
Canada. I had a 1/2 hr. session  
at the border, with the shotgun and  
live birds, etc. The weather turned  
to less drizzle. I should mention that  
the forest showed less and less white  
pine northeastward, but the few  
had cones (green). The spruces and  
firs were producing no cones, nor  
was tamarack. I then drove  
through New Brunswick along the  
Trans-Canada Hwy. Here, along  
the St. John River, was an area  
of dairy farms, with red-winged  
blackbirds very common. Deciduous  
trees lined the river valley, and I  
could see spruces and firs at the  
higher side slopes. To get to  
Moncton, I diverged from the T.C.H.,  
and took 112 E. This went  
through an interesting area of  
spruce/fir + deciduous -- mostly <sup>white</sup> birch.  
There were numerous side dirt roads  
and no "no trespassing" signs so  
commonly seen in the U.S. I stopped



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206.

Eastern Trip, New Brunswick to Nova Scotia

July 21 at one of these for about 45 min  
(cont'd) to make dinner. I heard siskins,  
but no grosbeaks or crossbills. I  
then continued to Sackville, New  
Hampshire, where I slept overnight  
in an old farm road just W of  
town.

July 22 The dawn was cloudy and drizzly and  
warm (about 55-60° F). I drove into  
Sackville for more tries to call Ray  
Maillet of the Canadian Wildlife Service  
to amend my collecting permit. I had  
also tried last night. He was not  
answering his phone, so I decided to  
just go on to Newfoundland. I got on  
the TransCanada Highway and drove to the  
border station to Nova Scotia where I  
got maps and brochures, then I went  
off the T.C.H. on Rte 6 E to New-  
Glasgow, N.S., which was shorter.  
Here the truck "lurched" very badly,  
so I stopped at an Esso station  
where I explained the truck's condition  
to a guy who said it was  
probably the gas filter. Well, I had  
bought one back on Red Lodge, Mon-  
tana, but I did not know the





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207.

Eastern Trip Nova Scotia to Newfoundland

July 22 location of it. Now could this mechanic  
(cont'd) find it. Finally I stopped at a Toyota  
dealer in New Glasgow, and he showed me  
it's placement, so I replaced the filter. The  
truck was great after this.

The forest between the first and eastern-  
most parts of Nova Scotia. were mixed,  
thick, deciduous + coniferous, with rare  
white pines, and mostly spruce and fir.  
There were no cones on any of the  
conifers throughout the province, and  
it appeared that there hadn't been one  
(a cone crop) for years since the ground  
had few old cones—these of black  
spruce. The weather was mostly  
overcast, with rare sprinkles only, the  
clouds becoming higher further eastward.

I got to North Sydney at about 4:00,  
when I stayed around the town  
until the ferry (cost \$49.50) was to  
leave for Newfoundland at midnight. There  
was a "Bantown Days" parade that evening.

July 23 The ferry left for Port au Basques at about  
1 am, and arrived in Newfoundland at  
dawn, just after sunrise. The weather  
was calm and partly cloudy. I  
drove N on the T.C.H., assessing the



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208.

Eastern Trip - Newfoundland

July 23 (cont'd) trees along the way. After about  $\frac{1}{2}$  hr. of driving, I turned off to explore some recently-logged forests. I stopped at a point about 5 mi. S of Codroy Pond, at a cleared area about 2 mi. E of the T.C.H. and above the highway by about 4-500 ft. I stayed here from about 8 am to 1:30 pm, with the decoys out. Both 305 and 307 called all morning, but no wild crossbills were heard. Two evening grosbeaks were heard, as well as pine siskins. Everywhere I explored, robins and white-throated sparrows were the most common birds. At about 2-3 pm I drove around the town of Flat Bay, then I drove up the Flat Bay Brook. Along this river, the forest was mixed conifers and hardwoods, with intermittent white pines and white pine groves -- the larger trees having moderate crops of new green cones. I drove slowly and stopped along the Flat Bay, but the skies were quiet for all birds. I found no good place to work + camp here, as small cottages lined the entire river (although very sparsely) the weather had become very good -- warm,



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209.

Eastern Trip - Newfoundland

July 23 (cont'd) Calm, and mostly sunny. I then continued up the T.C.H., and turned E on the new highway 480 to Burgeo. White pine was uncommon along the river paralleling the road (the Southwest Brook), and the spruces and firs had few or no cones. The area was mostly deciduous birches and alders. I turned back and drove into Stephenville that evening, and got gas, then drove about 15 mi. S and turned off W of the T.C.H. about 2 mi. along a dirt road and camped at a small pond in the middle of dense scrub forest.

July 24 The morning broke foggy but mostly clear. I heard no crossbills at the small pond that morning, so headed out to explore the Codroy Valley. Drove S on the T.C.H., then drove the roads around Great Codroy, O'Beigans, St. Andrews, Upper Fern, and Doyles, Nfld. The area was mixed woodlot and cleared settlement, with open fields mainly for hay. None of the trees were very large, and none had cones. Saw no white pine here, mainly tamarack and black spruce with uncommon white spruce.



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Eastern Trip - Newfoundland

July 24 By mid-afternoon, the clouds were  
(cont'd) accumulating and forming an overcast.  
Winds increased slightly.

the birds I had seen earlier, that is, late in the morning, included purple finches, pine grosbeaks, ruby-crowned kinglets, a hermit thrasher and white-throated sparrows.

Later in the day, I drove up to Corner Brook, Nfld. This area was no different from other areas, just more topography and less white pine, with more deciduous trees than most places. I then drove back to Stephenville, got gas, and drove E on Hwy 480 to Burgeo. The forest along the Southwest Branch River, which parallels Hwy 480, was more mixed than most places, and the northern bank of the river contained some of the most extensive white pine stands I had seen on the island. All white pines were large - larger than other tree spp., and most had just a few green cones hanging at the tips of the branches. I drove that evening for about 2hr. along the





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## Eastern Trip - Newfoundland

July 24 Burgess Road. After about Silver Pond, (cont'd) the forest became dwarfed and boggy in spots, with vast open areas of taiga. I drove to a point about 4 mi. S. of Peter Strides Pond, where I camped off on a side road. Here loons cried in flight, just after sundown.

July 25 The night was on + off drizzle, and the morning was the same. Here I was camped in a wet, boggy area of dwarfed black spruce and tamarack. I heard pine grosbeaks here. W-t sparrows were common. The mileage on the truck here was 58964.0, the farthest I would go on the trip. I was about 59 mi. from the junction w/ the T.C.H. I did not stay long, and left at about 8:30 am, going back toward the T.C.H. It began to rain substantially. I stopped at a point about Southwest Brook and stayed about 2 hr. with the decoys out -- siskins, but no crossbills. I then drove about 2 mi. more up the road (in the rain) and stopped



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# Journal

212.

## Eastern Trip - Newfoundland

July 25  
(cont'd) ~~was~~ about 1 mi. off the main road and waited out the next batch of rain.

Here I changed the truck's oil, etc.

Later, I drove up this gravel road, turning to dirt, S, which led past a couple of small lakes. This road was not on my 1:250,000 topo maps. I heard no crossbills here.

No cones on any conifers, except for few green cones on the rare white pines. Many of the trees were white birch and aspen, and extensive logging had been done recently throughout the region. I then drove back and camped at a high point above a stream leading N to Southwest Brook. White pines were more common around this area than other places I had seen on the island.

July 26 I did not set up a net, but had the decoys out at dawn. The day was sunny, warm. No crossbills were heard before 10:00 am, when I left. I decided then that I would leave Newfoundland, slowly driving to the ferry port at Port-aux-Basques. I drove N on 480 to



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213.

Eastern Trip - Newfoundland to Ontario

July 26 Tue T.C.H., then headed S. I stopped  
(cont'd) several times along the way, but  
found no crossbills. I got on the  
7:00 pm ferry, after spending the  
late afternoon at the terminal. The  
boat got to North Sydney at a little  
after midnight.

July 27 I drove from North Sydney along the  
T.C.H. W to the short-cut to  
Sackville on Hwy 6 in Nova Scotia.  
Here I turned-off onto a gravel  
road and slept a few hours until  
sunrise. The weather was drizzle and  
overcast. I then drove to the wayside  
above Sackville (to the W) where I made  
coffee. This was a good fir/spruce  
area. The decoys and I heard  
siskins and evening grosbeaks and  
purple finches here, but again, no cones  
and no crossbills. The weather was  
now sunny + breezy. I then got  
back on the T.C.H. and drove to  
Quebec via the St. Lawrence Valley.  
Along this route, the conifers  
were barren of cones. I continued  
along the T.C.H. to Ottawa along  
417, then connected to Hwy. 17 (the T.C.H.)



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# Journal

214.

## Eastern Trip - Ontario

July 27 and continued W to a gravel road  
(cont'd) around Muskrat Lake, Ontario, where  
I pulled to the side of the road at  
about midnight and slept 'til dawn.

July 28 The morning was clear + hot. I  
drove W to North Bay, Ontario, where  
I got some money at a bank, then  
continued W to Sault Ste. Marie,  
Ontario. The weather was hot +  
sticky. Red pine became more common  
further W, this being the only pine  
seed-bearing conifer at this time.  
White pine had green cones where it  
occurred, but not all trees and  
not a massive crop. I then drove  
along the eastern side of Lake  
Superior to Wawa, Ontario. The  
forest between Wawa and Sault Ste.  
Marie was mixed conifer/hardwoods,  
with good representations of conifers  
in the Lake Superior Provincial Park.  
White pine became rare north of  
the Montreal River. White spruce  
became more common - but no cones.  
I drove onto a small beach cone  
just 1 km N of the mouth of  
the Michipicoben River and camped for





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215.

## Eastern Trip - Ontario

July 28 the night. It was a clear, warm  
(cont'd) night. Loons called and swam in  
Lake Superior.

July 29 The morning was hazy and warm.  
I decided to explore again southward,  
since it looked better for crossbills  
nearer Sault-Ste. Marie. I explored  
many roads around the coast of  
Lake Superior, but conifers were not  
extensive and deciduous trees prevailed  
along the water's edge. I collected  
a sawucker for Ned in a birch/  
spruce woods about 12 miles N of  
Sault Ste. Marie. It was a young  
female, molting, no brood patch, small  
ovary. I did not catalog the bird  
and just kept tissues. I heard or  
saw no crossbills that morning.

Evening grosbeaks were the most  
common cardinaline, and frequently were  
heard. By noon I decided to  
go further W, so drove up to  
Wawa, then continued to Thunder  
Bay, Ontario. Evening grosbeaks  
were common, especially around  
Schreiber in dryer sites. I got  
supplies at Thunder Bay, then drove



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Eastern Trip - Ontario to British Columbia

July 29 W to just E of Ignace, Ontario, where  
(cont'd) I turned off S of Hwy 17 into a  
clearcut jack pine / aspen / spruce forest  
and camped for the night.

July 30 I had the decoys out at dawn  
while I had breakfast. Heard no  
Crossbills. - The weather was sunny and  
warm. I left the spot by about  
7:30 am, and continued W. to Manitoba.  
Conifers were replaced by hardwoods  
after Lake-of-the-Woods, and I  
did not again see many spruces  
until just E of Brandon, Manitoba.  
Here the white spruce were loaded with  
green cones. I did not explore  
Spruce Woods Provincial Park or Forest,  
but suspected there may have been  
crossbills if there were good  
thick stands of trees with cones.  
I continued W to Grenfell, Saskat-  
chewan, where I stayed at a motel.  
It rained that evening.

July 31 I drove from Grenfell, Saskatchewan,  
to just W of Chetwynd, British Columbia,  
today. I saw no conifers until  
around Edmonton, but I did not  
explore the area, as the forests were



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# journal

## Eastern Trip - British Columbia

July 31 not extensive here. The weather was (cont'd) rain the late morning, and just after I drove through Edmonton I learned on the radio that a tornado had touched-down in Edmonton killing 25 ± people (perhaps just as I was passing through!), so the weather was bad, especially NW of Edmonton, with showers, dark clouds, and wind. I did not see many conifers NW of Edmonton, as I was in a prairie / dwarf aspen area until past Dawson Creek, B.C. It became dark for me at Dawson Creek. I continued W, until finally the conifer forests replaced the prairie. I tried to find a place to camp along the Pine River, and drove down a dirt trail right to the river's edge. It was raining, and the road was slippery mud. I decided this was not a good spot, since it wasn't level and I feared the river could rise because of the storms. I could not get the truck up onto the highway for about half an hour, as the



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218.

Eastern Trip - British Columbia

July 31 mud was very slippery, so finally  
(cont'd) I let air out of the tires & barely  
made it out, gunning the engine to  
the extreme in low range 4WD. I  
drove a few miles further up the  
river and camped where a dirt  
road went past a shale/mudstone  
outcropping just above the Pine River.

Aug 1 The morning was dark clouds and  
rain. I picked a few cones off  
of a tilted young white spruce  
for the decoys. I then drove S  
along Hwy 97 in the direction of  
Prince George, B.C. The weather made  
the exploring difficult, as it was  
a nearly-constant rain. Here the  
conifers were mixed with aspen, and  
all of the forest trees were very  
tall. Many spruce had cones, but  
I was not struck by the cone  
crop here. I heard a white-winged  
crossbill when I stopped along the  
Parrish River. I again got stuck  
in some slippery mud in my search  
for crossbills, and stopped several  
times as I slowly went S to  
Prince George. The forests had more





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219.

Eastern Trip - British Columbia

Aug 1 deciduous trees further S and at lower  
(cont'd) elevations around Prince George. I  
drove around the countryside W of  
Prince George, but found no crossbills.  
The forests had some lodgepole pine  
in the sandier areas, but local,  
and the cones were sparse on the  
lodgepole here -- not much like the  
lodgepole I have seen further S in  
the western mountains. I then drove  
E of Prince George along the yellow-  
head Hwy. (Hwy. 16) to a roadside  
garbage can about 16 mi. E of the  
center of Prince George. I turned-off  
here, and in a few minutes  
heard a crossbill -- it was a lone  
Type 3 bird, which I recorded on  
tape 81 B, but could not get a  
shot at it. While this bird  
called from the top of a  $\pm 110$  ft.  
spruce, a flock of 5-6 Type 4's  
came around, and I collected a  
juvenile that called by itself in a  
small aspen next to the truck. It  
was bird #602, JGG 514. This interaction  
took place late in the afternoon,  
and by about 5:30 pm the rain



J. Groth  
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Journal

220.

British Columbia, Willow River to Bowron Rd.

Aug 1 became more frequent. I stayed around  
(cont'd) this spot for awhile, then decided to  
camp for the night. The rain eased to  
a slow drizzle and stopped at night.

Aug 2 I set up the net at dawn (or after  
it by one hour) which was at 5:50 am  
(so dawn must have been earlier); the  
clouds were thick and gray. I heard  
what I thought was a Type 3 bird  
fly over at about 7:00 am, but  
it did not come in to the calling  
decoys. The decoys called for other  
carduelines including common (but not  
abundant) pine siskins and common  
purple finches. No evening grosbeaks were  
heard. The decoys called for a  
calling olive-sided flycatcher, but no  
other red crossbills were heard. I  
waited until about 11:45 am, then  
packed up to look for a better spot.  
I drove E on Hwy 16 (the Yellowhead)  
toward McBride, then turned S on  
the Bowron Road. Here were clearcuts  
in the forest; no "seed trees" were  
left, however. I followed the  
road along through the valley S  
for about 7 miles and turned off



J. Broth  
1987

journal

221.

Eastern Trip, B.C., Bowron Road

Aug 2  
(cont'd)

into a gravel pit. Here I stayed for about 1 1/2 hours or slightly more, and heard pine siskins, purple finches, and saw 5 white-winged crossbills fly over, which excited the decoys. No red crossbills. I then drove further S on the Bowron Road, trying to get to Bowron Provincial Park, but there were no signs and I could not find a way. I think most of the roads here are just logging access, and there is no thru-way to Quesnel, B.C., so I drove around these roads for most of the late afternoon, then headed N again to find any way out. The forests here were being heavily logged, most very recently as just weeds were growing in burned-over clear cuts -- the forests were just a patchwork. I stopped to camp at a cliff above the river, at a point 12.6 miles S by road from Hwy 16 (the Yellowhead). It was drizzly and wet, and I heard no crossbills that evening. I set up a net before dark.

Aug 3

I found crossbills at this locality, most encounters were taped on JGG 81 and 82.



J. Groth  
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Journal

222.

Eastern Trip - British Columbia

Aug 3 (cont'd) Almost all (or perhaps all) of the red crossbills I saw here were striped birds, some molting into adult plumage. All red crossbills were of call types 3 and 4, with Type 3 more frequently heard. I collected 7 individuals here. This did not seem like a current breeding ground for crossbills. Some white-winged crossbills flew over the camp. The weather was good this day, with some clouds and some sun. The wind was slight.

Aug 4 The morning was heavy rain. I packed up and left to drive S by 8:00am. One reason, besides that I wanted to find breeding adult red crossbills, was that the holiday weekend was over and the roads here were noisy with logging trucks and there was an active operation not far away. I drove through the rain to Prince George, then S as far as 70 Mile House. All of the forests here looked fairly good for crossbills, with cones on almost every species of conifer. Further S, more lodgepole pine and Douglas fir replaced white spruce. I stopped for an hour at 70 Mile





J. Groth  
1987

Journal

223.

Eastern Trip - British Columbia

Aug 4 House, about  $\frac{1}{2}$  mi off the main highway  
(cont'd) near some small lakes surrounded by  
mostly lodgepole pine with green cones and  
a few spruces. I left the decoys  
out. A white-winged crossbill flew over.  
I then drove S to Clinton, British Columbia,  
and called in to Berkeley to Ned Johnson  
about arranging my entry into the U.S. <sup>on</sup> Aug 10.  
After the call, I got a room at the  
Nomad Motel, then drove out to look for  
crossbills. I drove 7.4 miles up Coon Lake  
Road off to the E of Hwy 97, then turned  
up into an area of dirt roads in an  
open, grassy forest of Douglas fir and  
ponderosa pine, both with moderate to good  
crops of old and new cones. Within a  
few minutes, I heard calls of a Type 2  
red crossbill, got recordings of song and  
calls. From 7 pm to 8:30 pm I recorded  
and collected 4 crossbills, one ("bird 613" on  
tape) a Type 5, the others Type 2's, with  
610 + 611 forming a pair. The Type 2's  
were apparently in breeding condition,  
possibly having just or more likely, getting  
ready to nest (or already nesting). I  
drove back to the motel at dark and  
prepared the specimens there.



J. Groth  
1987

journal

224.

Thompson Plateau, 7 mi. E + 2 mi. S Clinton, elev.  
2900 ft., British Columbia

Aug 5 I got to the same area as the latter part of yesterday (Aug. 4), and set up a net with 305 + 387 as decoys. The net was around a small <sup>3 ft.</sup> ponderosa pine in a grassy, open spot on a hilltop. The weather was intermittently cloudy, with some sun and even some drizzle + raindrops, throughout the day. I captured and recorded birds all day, and also shot a lone ♂ white-winged crossbill who was in a treetop. All of the interactions and occurrences of crossbills are documented in detail on tapes JG 82A - 82B. A total of 8 red crossbills were obtained, including call types 2, 3, and 4. Clarks nutcrackers, bluebirds, both nuthatches (red + white-breasted), ravens, chipping sparrows, juncos, western tanager and crossbills were all common. Giskins occasionally flew over. The evening and night became clear and cool.

Aug 6 The weather through the day changed from partly cloudy to mostly clear. I recorded and captured more crossbills; behavioral notes are in detail on tapes JG 82B / 83A.



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225.

California to Arizona

March 29 I left Albany at around 6:30 am -- beginning mileage on truck = 71178. Drove interstates 580 to 5 to 210 to 10, then went east on 16 to Phoenix, Arizona. I ran out of gas on the freeway south of Phoenix at 9:00 pm, then got service at 2:30 am.

March 30 I continued to Tucson then took Hwy 90 south to Sierra Vista, Arizona, where I got breakfast, and bought a fuel filter for the truck. I then drove south on Ariz. Hwy 92 to Carr Canyon Road and took it up into the Huachuca mountains. This year the road was open. The weather was sunny and cool, and it was windy up in the mountains. The higher elevations (burned areas around Carr Peak) were dusted with snow. I explored a few of the roads around the reef mine area. Pines here included Apache pine and Douglas fir. Cones were old on both, falling to the ground. No seeds for crossbills. I found a campsite along the road NW of the reef mine where the pines narrowed to a corridor along the road. No crossbills were heard today, birds included robin, steller's jay, rufous-sided towhee, pygmy nuthatch, anna's hummingbird.

March 31 The weather today was like that of yesterday -- windy and cool. At about 7:00 am a flock



## journal

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March 31  
(cont'd)

of six red crossbills flew into camp in response to the decoys. All were Type 2. I shot one male before recording any, then recorded the flight calls and shot the other five individuals one by one. None had food in their crops. A painted redstart sang nearby while I collected the crossbills. Later in the day I drove down the mountains and then over to Willcox, Arizona, where I stayed the night in a Motel 6.

April 1

Before dawn I left for the Chiricahua Mts. By 7:00 am I had gone as far as the road to Barfoot Park, but snowdrifts blocked the road. I found a camp just above Onion Saddle, in a depression along a ridge between two larger hills. The weather was sunny, cold, and windy. I stayed at this site all day but heard no crossbills. Birds included Mexican Chickadee, pine siskin, western bluebird, flicker, acorn woodpecker, Steller's jay, golden eagle, osprey, raven, sawucker, and sharp-shinned hawk. The wind calmed somewhat by evening.

April 2

I waited for crossbills to fly over at this site until about 11:00 am, but heard nothing. Cone crops were poor on all of



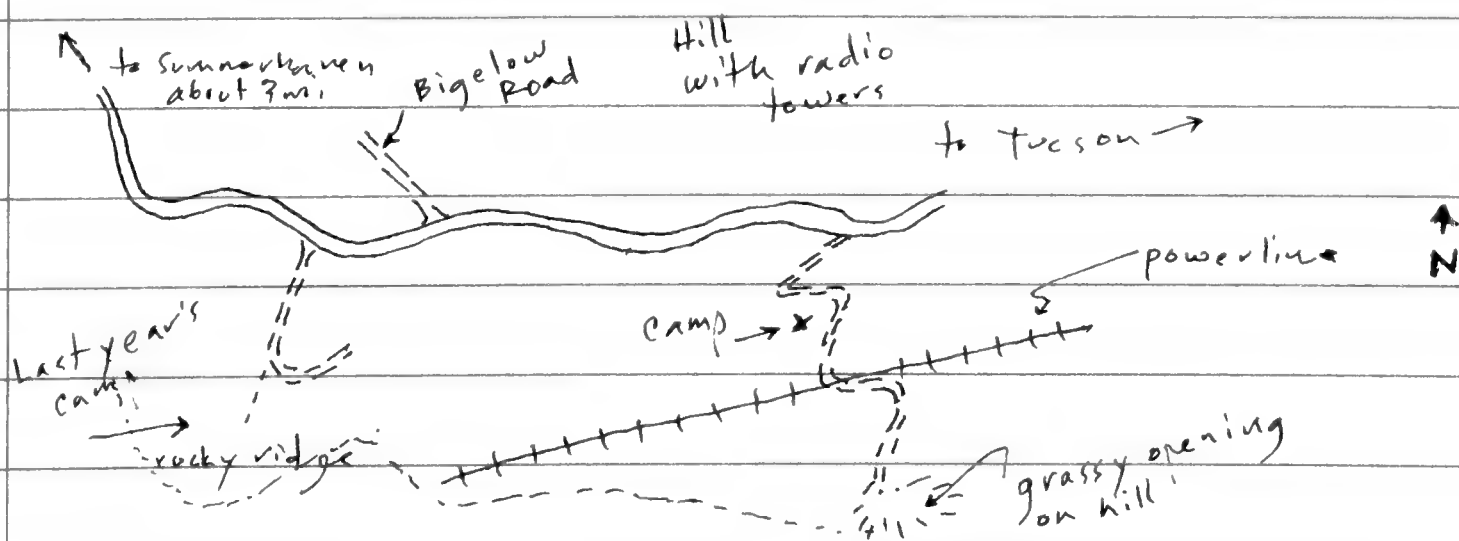


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1988

# journal

227.

the local conifers, including pinyon, douglas fir, Apache pine, ponderosa pine. At noon I walked a mile into Barfoot Park, where there were snowdrifts along the road and in shady spots. Last years good cones of Apache pine were mostly now on the ground. New cones were about  $\frac{1}{2}$ " - 1" in size, and it looked like a fair crop would develop by late summer here. I left the Chiricahuas and drove west to the Santa Catalina mountains in the afternoon. First stopped in Tucson for supplies, etc, then drove up the mountains. There were people camping in the spot I found last year (about 3mi from Summerhaven) so I then found a similar spot just down the road:



There were snowdrifts in the shade. Trees: ponderosa pine, douglas fir -- few old dry cones on each species.



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# journal

228.

April 3

The morning was sunny, cold, but not too breezy. I encountered crossbills on several occasions in the morning -- all were of Type 5 red crossbills. I had difficulty getting their attention with my decoys [06, 425, & 306]. I did manage to capture a lone female Type 5 (bird 663) in the morning, and I kept her. Later in the evening a lone male came around and I recorded his tools before he came down and was caught (#664). All crossbills heard today were Type 5's. In the morning I watched a flock of about six foraging in a ponderosa pine, but not on cones. I do not know if they were finding food. Large flock of cedar waxwings also seen, also western bluebirds, yellow-eyed juncos, pygmy nuthatches, stellers jays, ravens, pine siskins, evening grosbeak (one fly-over), black-capped chickadee.

April 4

Most of today's interactions with crossbills are on lanes JG 85A and B. All encounters were of Type 5 birds. I first shot one out of a flock of about 8 in a ponderosa pine (bird red crossbill number 665) -- his crop was empty. Later I got a group of four, possibly two pairs (birds 666-669). I saw the second pair come down around the



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April 4 camp, where the female went under the  
(cont'd) truck, drank water from the dirty frying pan,  
and later ~~eats~~ crusty snow with the  
male (who was netted). Bird 669 (this ♀)  
was shot after recording. Later still, a  
larger flock, the entirety of which was taken,  
was either shot or netted. This flock may or  
may not have been that with earlier #665,  
but there did seem to be favorite trees  
used by the birds on the SE slope of the  
ridge, indicating the possibility of a single  
flock revisiting those trees. The weather  
was less windy and warmer than the previous  
days, as high pressure centered near the  
area. The skins of the specimens were  
removed and put on snow in the cooler.  
I drove down to Tucson this evening to  
stay with Tom Hoels who is the curator of  
birds at the University of Arizona.

April 5. After measuring all crossbill study skins at the  
University of Arizona, I drove to Prescott,  
Arizona and stayed at a motel. Phoenix  
was hot on my drive through, and skies  
were sunny over the mountains.


April 6 Drove from Prescott slightly E on Hwy 69 to  
Walker Road and took this S through the  
mountains. The road went past Potato Patch,



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# journal

which was a grassy mountain meadow. All along this route was a ponderosa pine forest with old cones on the ground and no seed for crossbills. I then continued on the road leading to the snow containing Mt. Union lookout. Some doug fir along these mountains, but old cones also, and no seed. I drove that morning to a camp along the edge of a large burned area just SE of the lookout. I could see a lookout tower about 1 mile WNW of camp, and I was along a spike ridge facing SSE. There was a trickle of a stream in a gully just W down the road. No crossbills here -- new cone crop forming on the ponderosa pine moderate to good, and the douglas fir also possessing buds about  $\frac{1}{4}$  -  $\frac{1}{2}$ " in size - also moderate to good crop. Crossbills should arrive and breed this July - sept in this region.

April 7 The dawn broke clear for another sunny day. No crossbills were heard all day. I recorded and then collected a male junco with black eyes. Then, seeing another junco, I shot it. This second one had very yellow eyes , but not quite so light as the true yellow-eyed juncos





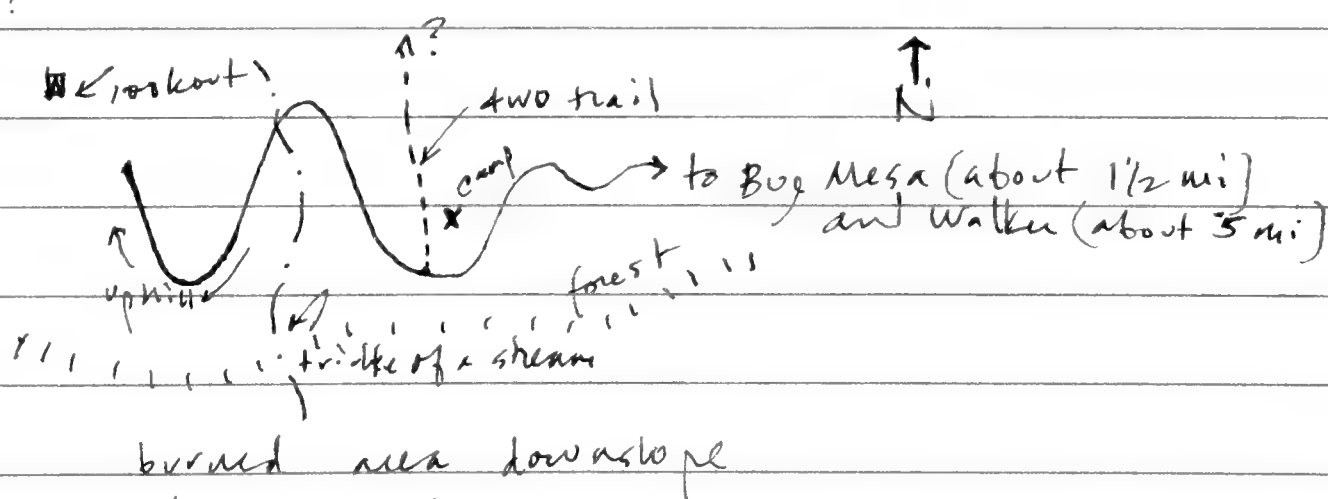
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231.

April 7  
(cont'd)

in the ranges of Southern Arizona. I compared the plumages of the two males in front of me and found no visible difference in color -- both were the typical "gray-headed" form with rusty backs. The Cassin's finch was the first bird shot ~~today~~<sup>here</sup> out of a flock of 4-5, and was collected yesterday morning. Cassin's finches sang here, also mountain chickadee, pygmy nuthatch, Steller's jay, orange-crowned warbler. I left this spot by mid-afternoon and drove to Williams, Arizona, and beyond. This is a detail of the Prescott NF campsite I had:



The forest at Prescott site was ponderosa pine, Douglas fir, oak scrub. I also heard wild turkey and violet green or tree swallows and saw many western bluebirds. Raven was seen.

I drove Arizona highway 89 north to Interstate 40, and drove this E to Arizona highway 64, then took this N. This road cut through open ponderosa pine and juniper



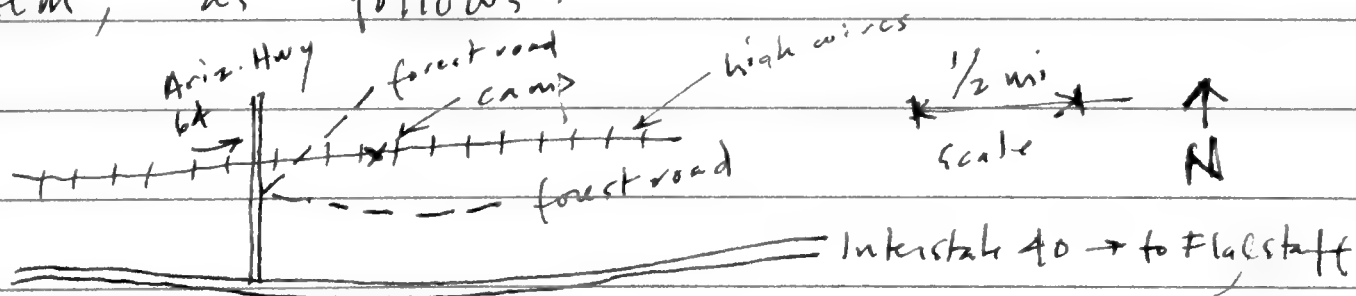
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232.

and piñon pine forest for about 10 miles, then thinned to grassy desert as northward brought lower elevations. I turned off of Highway 64 on forest roads to the east side of the highway (south of Red Lake, Arizona).

I drove here through some pine savanna habitat, saw an antelope, a head of elk, and a head of deer. There were few old dried cones on the ponderosa pine, with a moderate crop of 1" cone buds forming on the trees. The crossbills (type 2) should enter and breed in this area in late summer. I camped along a road underneath a high electrical and/or telephone wire system, as follows:



April 8 No crossbills were encountered at this site. I saw pine siskins, chickadees (mountain?), stellers jays, robins, bluebirds, meadowlark (quies?). I collected a pine siskin out of a flock. It was a cold night, and would be a sunny warm day.

I left the site by about 10:00 am and drove west on Interstate 40 to Barstow,



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233.

then continued west on Calif. Hwy 58 to Calif. Hwy 395, then drove north. Along the route (earlier) I had turned off I40 to investigate the Providence Mountains, but I found no good road to use -- I did not have proper maps. A spur off of 395 to the west was taken, which is labeled "J41" on my maps, it is just S of Little Lake, and goes up into the Sierra to the Kern River. I camped near the end of this road in the piñon/juniper forest near a spot where many people were camped and apparently fishing in the R.

April 9 No crossbills were heard at this site, so I drove back to 395 and then north to the pass at highway 89 (monitor pass). It was a good sunny day. I did notice a fair crop of Jeffrey pine cones, but I did not stop anywhere, including the lodgepole pine zone where surely crossbills would be encountered. I arrived home at around 5 pm.

April



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journal

234.

April 17 At about 10 am I drove N out of Berkeley  
mileage = 73901 and headed to Oregon. Bay area weather was  
cloudy, drizzly, and cool. I took decoys  
274 and 306 along. I drove up Interstate  
5 to Ashland, Oregon. Along the route was  
rain + poor weather, and I hit a bad patch  
of wet hail and spun the truck out just  
a mile or two past Weed, California. All  
ok. the tire is badly leaking air, and at  
Ashland I tried another repair while  
squatting in the rain. From Ashland, I  
took Oregon Highway 66 east to Klamath  
Falls. This road went through heavily  
used (logged, grazed, etc) forest of ponderosa  
pine and Douglas fir. The ponderosa pine  
was mainly small, and the cone crops  
were poor on all trees. No snow was  
seen. I stopped to photograph a white  
relican in the Klamath River. The weather  
became only partly cloudy east of  
the Cascade rise. I took Oregon highway  
97 north out of Klamath Falls, to  
Chiloquin, and then unsuccessfully tried to  
find my old 1985 campsite in the forest  
near Saddle Mountain. Cone crops here  
were poor, but some old ponderosa pine cones.  
I camped in a pine savanna area just



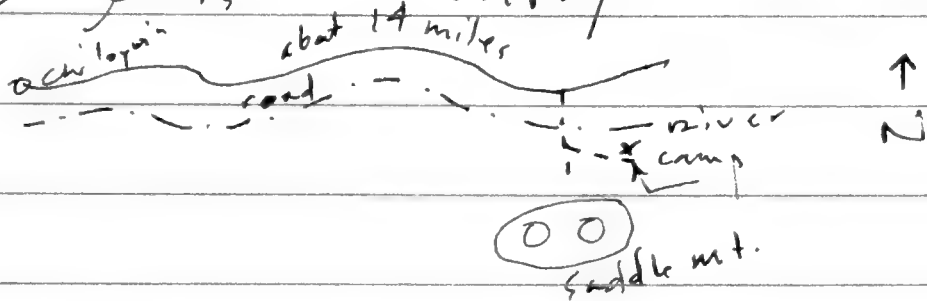


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journal

235.

north of saddle Mt. The habitat was of  
ponderosa pine and juniper, with sagebrush  
and grass understory:



April 18 The morning broke mainly clear after  
a clear, cold night. Frost covered  
the tundra. Townsend's warblers sang  
loudly, also purple finch, Cassin's finch.  
I heard pine siskins, Steller's jays,  
Clark's nutcrackers. A lone Type 2  
crossbill was recovered and shot (bird  
678 -- after a short hunt to find the wounded  
bird). Later, at 9:45, a flock of 7  
Type 2 adults came around and sat on  
the decoy cages, but I collected none  
since I had no net set up. The day  
grew cloudy, and it lightly drizzled several  
times, but the sun remained fairly bright  
at this spot. Forecast of more rain  
tonight and tomorrow.



J. Groth  
1989

Journal

236.

Trip to Chiricahua Mts, Cochise Co., Arizona.

May 20 I left Berkeley today at around noon, driving the route of Interstate highways 580 east to 5 south. Mileage on the red Toyota truck was ~~87~~ 87923. By sundown I was crossing the desert to Arizona on Interstate 10 via 210 - the Pasadena Freeway. Weather was high clouds, rather cool in the Central Valley. By about 10:30 pm I had reached the Vicksburg exit on I10 in Arizona, where I camped and slept out in the desert just about 1 mile south of the freeway in a creosote flatland.

May 21 Woke to the calls of the Crissal Thrasher which perched on the mesquite (rare) bushes in the desert. I explored and found an old stick nest in that tree, 5 ft above the ground (morning dove or thrasher?). Left the area, but first saw bird (thrasher?) fly up and later found an old canid (looked like a dog) skull and a few bones. <sup>Stopped at the Dragon art -- sunny there -- took a few photos.</sup>

Arrived at Pinery Canyon, Cochise Co., around 4:30 pm. Creek fairly dry in the canyon, but water farther up. I drove into Barfoot Park and found three carloads of campers and it didn't look like they were about to

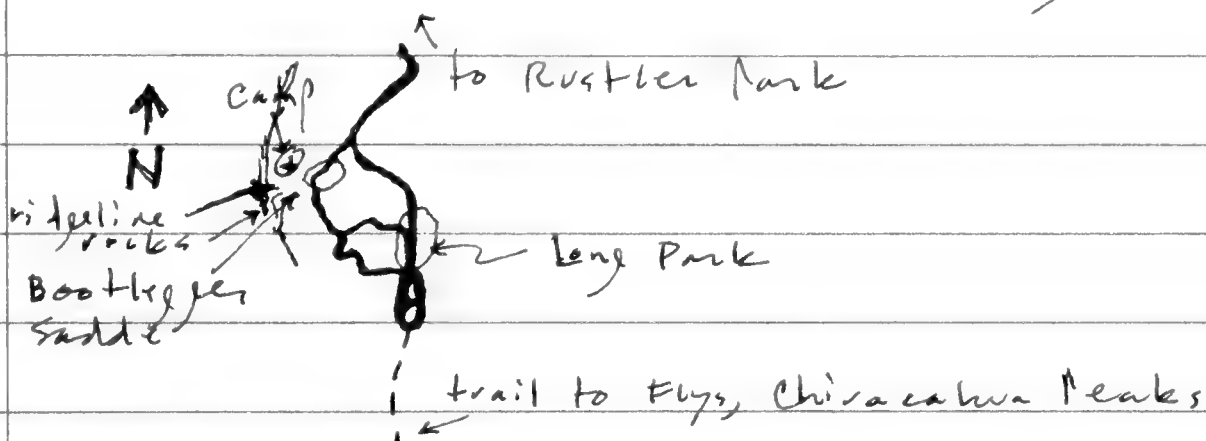


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Journal

237.

Trip to Chiricahua Mts., Cochise Co., Arizona  
May 21 leave. There I found Evening Grosbeaks  
(which must nest locally) and the typical  
robins, steller's jays, and yellow-eyed juncos.  
I then drove up the road to Bootlegger  
saddle. I saw several hikers around.  
At Bootlegger, I decided to set up camp  
on the hill near the ridge:



Few birds were around. Ravens and Steller's jays  
were noted. The wind was strong and  
from the west. All conifer cones on  
Apache and ponderosa pines ~~limber~~ pine,  
and Douglas fir were brown, still  
on the trees, and in fair numbers.  
They looked too dry to contain seeds  
and most were falling rapidly. No owls  
were heard that night.

Bootlegger Saddle, elev. 9000 ft., Chiricahua  
Mts., Cochise Co., Arizona.

May 22 the sun began to rise around 5 am,  
so I set up the nets and got out  
the decoys. I brought birds 306, 305,



J. Groth  
1989

Journal

238.

Bootlegger Saddle, elev. 9000 ft, Chiricahua Mts.,  
Cochise Co., Arizona.

May 22 425, and 745. 745 is the type 6 bird  
cont'd captured last October. 425 is the captive-  
raised hybrid Type 1 / Type 2, 306 is  
the type 4 ♀, and 385 is a  
Sierra Nevada ♂ (Type 2).

No crossbills were heard all morning.  
Some other species were noted, including  
western and Hepatic tanagers, yellow-eyed  
junco, raven, Steller's jay, Magnificent  
hummingbird, broad-tailed hummingbird,  
pine siskin (uncommon), brown creeper,  
and at present, warblers and flycatchers  
are unidentified.

Birds 425 and 385 (the males) both  
sang and called loudly all morning.  
The females (745 and 306) were quiet,  
but both called a few times,  
usually weakly. It was sunny all  
morning, rather breezy with some  
high cloudiness.

The afternoon was dull. No crossbills  
heard. An Arizona Fish + Game officer  
stopped at the camp. He told of the  
hot winter just past -- dry, little snow --  
and also of goshawks, mountain lions  
on Fly Peak, and five parrots released  
at South Fork which he says have





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239.

Bootlegger Saddle, elev. 9000 ft. Chiricahua Mts.  
Cochise Co., Arizona

May 22  
cont'd

flown as far as Payson! I told him I would be here until Friday. He said he had seen me at my truck at Barefoot back in '87.

The evening continued breezy and cool, with strong westerly winds and high clouds. A goshawk was seen, also more steller's jays and two siskins flew over. I thought I heard some painted redstarts.

May 23

Last night I heard a whippoorwill call a few times just around sundown.

The birds of the morning were olive warblers and black-headed grosbeaks, along with brown creeper, steller's jay, greater peewee, hepatic tanager, an evening grosbeak (collected), yellow-eyed junco and some others.

A flock of six type 2 crossbills came around at about 8:30 am. I lost the entire flock, and no more crossbills were heard all day. I shot one ♀ after recording (bird 758) and the others were all sacrificed throughout the day. The three babies all appeared about the same age -- robust begging was heard from them prior to capture. All had no fat. I believe 760 was related to 758,



J. Groth  
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Bootlegger Saddle, elev. 9000 ft., Chiricahua Mts.,  
Cochise Co., Arizona.

May 23 judging by call similarity, and the fact that  
cont'd 759 did not appear to have bred, as did  
758. The babies were all 0's for age  
category.

Pine siskin was uncommon, with two  
fly-overs all day. Raven was common.  
Band-tailed pigeon was in song here  
on one occasion, with some rapid fly-  
overs. Robin was heard late.

There must be pocket gophers in the little  
meadow on the saddle. Broad-tailed and  
Rivoli's hummingbirds were scarcer today  
than yesterday. A red-breasted nuthatch  
was heard, but strangely, no pygmy  
nuthatches have been encountered. Olive  
warbler is common here.

Today the wind was less strong than  
yesterday, but it gustated later in the  
day.

May 24 The wind was very strong and noisy this  
morning. Olive warblers, b-h grosbeaks,  
juncos, robins, and ~~gray~~ black-throated  
gray warblers were in song early. Pine  
siskins flew high over only rarely.  
Rivoli's hummingbird was not seen, but  
broad-tailed hummer over the meadow all  
morning. Brown creepers continued common.



J. Groth  
1989

journal

241.

Bootlegger Saddle, elev. 9000 ft., Chiricahua Mts.,  
Cochise Co., Arizona

May 24  
cont'd

The weather in the morning was again mostly sunny with some high clouds.

The wind and sunline continued all day.

No crossbills were heard all day. Mexican chickadee was present, an olive warbler (♂) was seen foraging low in the

oaks along the ridge here at Bootlegger.

Hairy woodpecker was present and hammered long on a large dead ponderosa pine near the top. [The olive warbler appeared to have green hairy caterpillars ~~in~~ in its bill.]

No evening grosbeaks were heard all day. Pygmy nuthatches were not heard. Siskins were uncommon - maybe one flyover in three hours. Three ravens (northern) were

acrobatically flying on the ridge.

I was able to photograph a ♀ broad-tailed hummingbird at a cactus flower. Also,

I photographed and watched some

Sceloporus jarrovi (by altitude in Stebbins) also today.

Hikers were fairly common and a forest service truck stopped but did not see any camp.

May 25

The morning was like all the others - windy, and this one especially cool.

No crossbills were heard at dawn.



J. Broth  
1989

Journal

242.

Bootlegger Saddle, elev. 9000 ft., Chiricahua Mts.,  
Cochise Co., Arizona

May 25  
cont'd

I decided to walk north on the trail to Rustler Park. After about 200 yds, I heard croaking and cackling calls that sounded like parrots. I then climbed the hill about 100 ft. in elevation and was right under the tree that had seven thick-billed parrots. I went back to the car to get the camera and binoculars. I then watched and photographed the birds, which were foraging on dry cones on a ponderosa pine. The birds mostly foraged directly on hiscent cones, but sometimes broke off the cone to forage. Cones dropped regularly from the tree. They looked halfway between what a crossbill does and a squirrel does to a cone, with some patches denuded of scales, others spread and broken. After some short fly-arounds by individuals, two alighted on the top of a dead pine, one with no small twiggy branches. There they clung to the bark around a small hole in the tree. One of them appeared to be excavating. The others vocalized and flew around, but generally the majority of birds





J. Grote  
1989

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243.

Bootlegger Saddle, elev. 9000 ft, Chiricahua Mts.,  
Cochise Co., Arizona

May 25 continued foraging. I saw (twice) birds cont'd that had bands on their legs. It was difficult to see the legs, as the birds tended to forage in shady areas. A water trough made of concrete (with water) was found at the site (or near, just a little S and down the hill) but I did not see the birds go there.

I visited the parrot site again in the early afternoon and again in late afternoon. I did not hear them.

I walked various roads and trails from Bootlegger today. Few new birds were noted at higher elevations, but more brown creeper, gray wood pecker, and hermit thrush (songs). On the trail north to Rustler park I saw a wren (most likely house wren [short tail, indistinct eyestripe, small size]) and also red-faced warbler. Pygmy nuthatches were common, plus I saw a pair of white-breasted nuthatches in a grassy, rocky spot -- one bird was on the rocks on the hillside. Flicker was heard. Olive warblers were common.

The wind continued strongly into the evening. Bootlegger Saddle was one of the windiest spots due to prevailing, unidirectional



J. Groth  
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244.

Bootlegger Saddle, elev. 9000 ft. Chiricahua Mts.,  
Cochise Co., Arizona,  
westerner.

May 26 There was no wind in the morning. Temps about the same, maybe  $48^{\circ}\text{F}$ . Bard-tailed pigeons were common and active again, with a large flock of about ten on the ridge by the camp. I heard the parrots three times at intervals from 6-10 am. They were again in the tall pines on the hill north of the camp.

I caught a yellow-eyed junco with six bands on its legs. The data were: right leg white over USFWS 2051-44329 over white; left leg orange over black over white. The bird had a large cloacal protuberance, no fat, and weighed 20.2 gm on a digital balance. I saw the bird twice again before 9 am. Each time it was foraging closely to another, unbanded junco. I did not follow the bird; they were in the small meadow at Bootlegger and along the ridge in the trees, ground, and rocks.

The wind remained very still, but no crossbills (no evening grosbeaks nor siskins) were heard. There were no clouds in the day.

I then <sup>walked</sup> ~~pushed~~ up the trail toward



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245.

Chiricahua, Arizona to Black Mts., New Mex.  
the parrot site a short way, but early  
in the day (around 11:30 am) I packed up  
and left the area. I then drove down  
the east side of the Chiricahua, then  
to Lordsburg and on to Silver City, New  
Mexico. I drove east of Silver City  
over the Emory Pass road. I stopped  
in a canyon and heard a type 2 crossbill  
there. I stayed the night in a  
motel in Truth or Consequences.

May 27 In the morning I drove west on Hwy  
59 to Chloride and the mountains  
beyond. I found a good, abundant crop  
of cones on the ponderosa pine. All  
cones appeared dry and old, nearly  
seedless except some seed near the  
bases of the cones. I set up  
a camp near the continental divide  
point on Hwy. 59. No crossbills were  
heard late that afternoon or evening.  
Common were western bluebirds, mountain  
chickadees, gray flycatcher, western wood-  
pecker, dark eyed junco, pygmy  
nuthatch, northern raven, steller's jay,  
yellow-rumped warbler, western tanager,  
and brown creeper. Also present were  
white-breasted nuthatch and robin and



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Black Mountains of New Mexico

flicker. Mourning doves were breeding.

May 28 The morning was cool and still. I heard a flock of type 2 crossbills early, then captured a lone type 2 juvenile female. No other crossbills were heard until about noon when a group flew over. I noted wild turkey, common nighthawk, purple martin and tree or violet-green swallow. Ash-throated flycatcher was heard. The day was sunny with a few high clouds. Coyotes were heard early in the morning.

May 29 The morning was a repeat of the weather of yesterday. First, at early dawn, a pair of Type 2 crossbills came in and perched over the net. They flew off. Then another group of four came in. They flew off as well. I heard crossbills about twice again that morn'g-- all observations were of Type 2 birds. By about 10:30 am I packed up and drove first west on 59, then south toward the Black Canyon area on Hwy 61. I stopped a few times along the way.





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## field notes

247.

Dec. 12

Animal Behavior Station, University of California, Berkeley.

Began to dismantle the colony of captive crossbills today. First removed the four birds ( $\sigma^7385 + 3\text{f}$ ) from the middle two cells. Gave numbers 766 + 767 to the two captive-raised  $\text{ff}$  [daughters of "59" and "33"], one of which nested last spring and raised the new  $\text{f}$ , now numbered 768. Recorded first bird 767, who sounds Type 2-like. 768 also called in Type 2 calls. At 11:05 am some wild Type 2 crossbills flew over the Behavior station, but did not elicit much vocalization from the captives. I then prepped bird 767 ... more wild Type 2s flew over at around 11:55 - 12:30 in about three incidences. Then I caught and removed "33" and "59" from their cell. 385 gave some twittering calls, and  $\text{f}$  766 responded with the same calls. I recorded flight calls from "33", then removed one  $\text{f}$  juvenile from "33's" cell. I then got true flight calls from 385 as wild type 2s flew in the treetops at the Behavior station. As I started leaving, I put "33", "59", and their daughter back in their cell (the juv.  $\text{f}$  did not call, nor did "59"). I took 385 and his daughter and 766 home to prepare.

Dec 13

I arrived at the A.B.S. at around 1:30 pm. I removed five crossbills from the cell of "33" and "59", including two young  $\text{ff}$  (now numbered 769 and 770 [bill L]). Assuming "59" is the male with the right-crossing bill, the other two males are both left-crossing and are assumed to be the young males. The birds were quite non-vocal, except for alarm call series by "59", also some varied calls, including flight calls, of young  $\text{f}$  770. Young male 771 also was recorded in "bree"



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field notes

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Animal Behavior Station, University of California, Berkeley, ~~Dec 11~~

Dec 13  
(cont'd)

and other miscellaneous calls. some type 2 wild crossbills flew around the station on a few occasions, but captives did not respond, except ♂ 771 called at was not recorded.

Dec 14

I tried to record "59" plus birds in his cell: 769 and 772.

Also I brought out three new males from the cell of birds 425 and 306: they were numbered 773, 774, and 775. 773 had the left-crossing bill.

773 and 774 were recorded in "bree"s and song, also in loud, Type 1-sounding flight calls. 775 did not call. 769 and 772 gave only a few, Type 2-sounding calls. "59" also was recorded in flight and alarm calls.

It was a cold, increasingly cloudy afternoon, and no wild crossbills were heard. I put 775 back in the cell until the next recording session.

Dec 17

Brought out 306, 425, and three new birds from their cell: 775 (male, R), 776 (♀) and 777 (male, L). 306 gave some toops, [not recorded] immediately, then was quiet. At 12:10 pm a lone, wild Type 2 bird flew over getting no vocal response from the decoys.

















